

# Feral Bo(a)rderlands: living with and governing wild boar in the Forest of Dean



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## SUMMARY

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This thesis explores the feral rewilding of wild boar in the Forest of Dean, England. Bringing together the generative concepts of ferality and bo(a)rderlands, I show how places, practices and politics have been multifariously churned by their (re)introduction. By undertaking an empirically rich ethnography and paying attention to a range of human-nonhuman relations, the fluid presence of wild boar, their agency, and the ways in which they blur spatial and moral (b)orders are brought to the fore. This contributes to critical literature on rewilding by, firstly, expanding its focus beyond the spaces of official practice and bringing it into conversation with matters relating to biosecurity, wildlife management and risk; and, secondly, by providing an embodied and emplaced piece of research.

Working broadly with post-structural approaches that emphasise movement, practices and relationality, I show how the spatial-temporal rhythms of wild boar and their more-than-human relations generate a multiplicity of affective encounters and traces. For different human actors living in vicinity to wild boar, their sudden and unexpected presence disturb and reconfigure experiences of place, whilst for governing wildlife agencies they necessitate new practices of knowledge production and techniques of control. Both boar and humans alike are shown to negotiate one another's presence in ways that co-produce new, though not necessarily desired, relational spaces. These differing experiences, responses, practices and lives coalesce as a complex and contested local politics which generates discord with the mechanisms of national policy. Thinking with the concept of feral bo(a)rderlands helps draw attention to the messy and uncertain relations, heterogenous agencies and multiple knowledges that are bound up within rewilding events. While revealing the tensions that run through these, the thesis also suggests ways in which these can be productive.

## ACKNOWLEDGEMENTS

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This thesis is very much a product of my time in the Dean, a place I found hard to leave. Stepping out of the cottage and almost immediately into the forest is something I miss, whether sunshine, gloom, mist, drizzle or rain. So, firstly, through convivial grunts, sniffs and snorts, I need to thank the Dean boar, whose beguiling presence has enriched my life and led me along unexpected tracks. More traditional and sincere thanks go to people I bumped into and with whom I chatted; those who offered their time to speak or walk with me; and those who included me in their various activities and practices.

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## INTRODUCTION

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### 1.1 Three bo(a)ring tales

I am not unfamiliar with wild boar. Journeying to the point when I started this PhD had taken me along a path and through places where my life intersected with some of theirs. I have had several encounters in different continents and contexts, experiences which still linger as memories. A few of these had felt likely- fleeting moments whilst I carried out ecological fieldwork, tracking and camera trapping a range of mammals. Boar were not the focus of this research, but they were there in forests and grasslands as prominent presences- occasionally through embodied encounters, though more often through their conspicuous foraging traces and dung, or else as semi-digested matter found in carnivore scat. These experiences, I should emphasise, certainly don't make me any kind of wild boar 'expert'- there probably can't even be such a thing. This thesis begins with three less expected, intriguing incidents that often spring to mind whenever I think of earlier wild boar encounters. Though topographically removed from the UK, the setting of this thesis, they highlight important themes that run through human-wild boar relations more broadly. Whilst acknowledging the importance of specificity in research, they also show how narrative threads connect near and far-flung places, and their multispecies relations.

#### **Story One- Urban edgelands**

February 2004, Japan. I stepped off the plane into the jarringly cold concertina jet bridge, immediately irritated at my friend's assurance winter had finished early. From the subsiding international airport, I caught a bus to Nishinomiya, a city like many others in Kansai, part of the ceaseless conurbation that fills the lower Kinki plain and creeps up mountains until they become too steep. My friend had

arranged for a neighbour to meet me and when we do, he tells me, proudly, that Japan has four distinct seasons. Winter, he says, is always cold and dry.

Within a couple of months, spring crept in and temperatures increased. Blossoms- first plum, then cherry- began to fluff gnarled trees lined along canalised river embankments and scattered through parks, where they would become central to annual hanami festivities. Near where I lived, the Shukugawa river runs down from the hills to the bay and this temporarily helps shape my life, offering a line through and out of the city for hiking and running. It doesn't take long, heading upstream, for the foothills of the Rokko massif to steepen and the expensive houses to increasingly mix with cedar forest.

In this area I discover Kabutoyama, a charismatic, dome-shaped monadnock that bulges distinctly from the surrounding hills. Making my way up to the temple that sits high on its side and overlooks the chaotic urban landscape of Kansai Bay became a weekly rhythm. Not long after the blossoms had fallen from the trees and the drunken hanami parties finished for a year, an old friend of mine visits, and we decide to walk up to Kanno-ji temple and chew the cud. After an hour or so in warm spring sun, we take a different route down, descending some steep, winding roads where the forest cedes back to suburbia. As we walk through this hybrid hill-scape, something catches my eye. Startled, I grab my friend's arm and point, silently. She stops, turns and yelps! The cluster of animals reply in panicked grunts, hooves pounding hard ground and bodies cracking through dry vegetation as they disappear. My friend turns to me, wide-eyed, "What the fuck were they?!"

I had known there were wild boar on Rokko-san. In fact, they were a well-known attraction at its summit, lingering around for food from encounter-hungry tourists, but I certainly hadn't considered they might be nearer home. I had never seen wild boar in the 'wild' before and had imagined such a moment would be more 'natural',

rather than disturbing a family- I didn't know they were called 'sounders' at this point- as they rummaged around vegetative scrub in an urban edgeland. In my mind, this wasn't where they were supposed to be. But there they had been, breathing, feeding and snorting in a suburb, albeit one enmeshed with plants. However, there was something else; in the fleeting moment before my friend yelped and broke the silence, they had already been observing us, quietly and calmly. Though my friend and I were both shocked, the boar had seemed at ease and comfortable, emplaced in their surroundings until we burst their calm.

### **Story Two- Village paths**

April 2014, Poland. Nestled on the Belarussian border, Bialowieza is a place of imagined pasts and futures. It is frequently represented as the finest remaining tract of primeval lowland forest in Europe, a haunting memory of a once wider and wilder European landscape that has been lost<sup>1</sup>. Its contemporary uniqueness, secured by the exclusionary hunting practices of a past tsar, centres on the 'Special Protected Area' (SPA) at its core. Access nowadays is still limited, though it is an experimental field-place for ecologists, forestry researchers and visitors with licenced guides, rather than aristocratic huntsmen. Despite its status, there is no artificial boundary that secures this space from the wider forest assemblage, just occasional policing by forestry officers, signs and natural borders. The SPA has been unmanaged for centuries and is, quite frankly, enchanting. A mosaic of oak, hornbeam, limes, and soggy alder-willow carr. Huge, mature wind-torn trees lean, lie and decay in soft soils and swamp. In spring and summer, flowers grow abundantly and the forest wafts with wild garlic. Faunal life is present all around;

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<sup>1</sup> Schama (2004) has written about the landscape, history and memory of Bialowieza.

the multiple rhythms of woodpeckers, waves of birdsong and mammal signs: wolf scrapings, deer antlers rubbing on bark, and boar rooting in soil.

At the time, I was working as a field assistant, tracking bison movements via radio telemetry and trialling camera trapping to identify individual lynx and estimate population. Winter snow is becoming increasingly sloshy, researchers tell me, and so the reliance on snow tracking to estimate populations of solitary carnivores is more difficult. One day, following the bleeps of bison collars into a spongy, wet woodland, a colleague and I spot a sounder of wild boar, perhaps 20m away in some open understorey. Mothers and young, heads burrowed in vegetation, occasionally touching one another, grunting, temporarily oblivious to our presence. We watch as they snuffle through the soil until their behaviour changes, seemingly more vigilant, snouts up, and then vanish into vegetation. We were sure they hadn't seen us but, more likely, smelt our humanness amidst the plants and soils and become nervous.

This experience felt completely different to that in Japan. It was not an urban periphery, but a complex and ecologically rich landscape layered with nonhuman life and autonomous growth. The forest, despite being regulated, felt 'wild', unruly, brimming with possibility, a place where one might imagine wild boar belong. And, yet, another encounter a few days later seems more significant. In the evening, walking in the dark from the research institute to my village accommodation, I am jolted from thoughts by a huge, grunting silhouette bursting from a bush metres in front of me. Seconds later, it is followed by another...and another...probably five or six. My heart thumps as I stop, static and dazed, until they have gone. Unlike my experience in the forest, this is unnerving and, quite frankly, scary. They were too close, a disorientating sensation compounded by the near darkness. Gathering myself and continuing to walk home, I felt edgy, a feeling that remained whenever I trod the same path again at night. Among many thoughts, I wondered why 'these' wild boar were not in the verdant, archetypal forest nearby, rather than snuffling in

village shrubbery. Once again, my assumptions about wild boar spaces jarred with the reality of their movements, behaviour and desires.

### **Story Three- In the maize**

July 2015, Romania. I was working on another conservation project, one that involved walking day after day through the eastern Carpathians, primarily looking for wolf scat on long transects in valleys and along ridges. The mountains have steep valley slopes with deeply rutted forestry tracks from heavy forest machinery. Summer transhumance brings shepherds, their flocks and sheepdogs into the mountains, living alongside permanent nonhuman lives, including wolves and bears. Walking, we regularly pass raspberry scented bear splats and, occasionally, the putrid scat of wolves, precariously located on tussocks and rocks. Amongst other matter, these occasionally revealed the bone, skin and bristles of wild boar, another omnipresent actant in these mountain assemblages.

We sleep in a cabin, up a valley and across a stream from some ruined buildings and structures that speak of a different economic time, perhaps one that was more 'domesticated'. Once there had been a small village and community, though the inhabitants were encouraged to move due to regular flooding. Only one person remains, an old farmer, owner of a smallholding with some chickens, a tiny orchard and crops. He had refused to move, I am told, because the valley is part of who he is- it is his life. From him and us on opposite sides of the river, there are no more dwellings or settlements up the valley, just one or two rusted trailers that house seasonal foresters.

One night, I am startled upright in my bed. I hear something. And again. Two gunshots, then a third, followed by some strangled cries. Perturbed, my colleagues and I go downstairs and peer through the darkness to Dimitri's farm, a light faintly flickering. Silence. The following day, we go over and are relieved to see him at his

door. Pre-empting questions, he tells us irritably it was wild boar that had pushed through his tired old fence and were devouring his maize, again. They have, he says, acquired bad habits. Shooting in the dark, Dimitri presumed he had missed all the animals, so expects they will return. Though annoyed with the unruly wild boar, Dimitri is also frustrated with the local hunting association who are expected to manage the animals to minimise such events. Most striking for me, however, was that in a forested, mountain valley with barely any hard, human borders, wild boar had a taste for one of the few places that was specifically not for them, in spite of its lethal risk.



These personal anecdotes introduce different situations where I have encountered wild boar and where wild boar have encountered me<sup>2</sup>. Moreover, they provide fragments of broader narratives in locations where human-wild boar relations have been long-standing and persistent, unlike in the UK. Though different contexts, these offer openings to some of the key themes and tensions running through this thesis. Firstly, they describe experiences that hint at the different sensory worlds inhabited by humans and wild boar, distinctions that can make for lively encounters occurring within complex material-semiotic landscapes. Secondly, they speak of wild boar inside or at the edges of spaces that might ordinarily be understood as for humans- a city suburb, a village and a farmstead. All of these, however, were in proximity to what might commonly be understood as ‘natural’ or ‘wild’ habitats- large expanses of forest with limited human presence. The wild boar in these

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<sup>2</sup> Here, it is interesting to highlight that taxonomically speaking these stories speak about different animals. Throughout Europe and Asia, ‘Eurasian wild boar’ are classified as *Sus scrofa*. However, wild boar in Japan have variously been classified as *Sus scrofa leucomystax*, a subspecies; or else *Sus leucomystax*, a distinct species (Gongora et al, 2018). Changing technological advances have meant saying what a ‘wild boar’ is, according to Linnaean classification systems, is uncertain and ambiguous. This appears to be one way in which they defy the neatness of categories.

stories, therefore, appear to blur human boundary-making practices with their fluid, more-than-human topologies. In so doing, they also expose the ambiguity and tension of binary categories used to (b)order and organise space and life., and the power asymmetries of doing so.

For Dimitri and the residents near Kabutoyama and Bialowieza, the kinds of events described are not entirely unusual nor unexpected. Whilst for me they persist as lingering and affective memories, for others it is likely they would have been more mundane and long-since forgotten. Wild boar are historic cohabitants and there is familiarity with their charismatic presence and behaviour. Indeed, negotiating space with large, mobile mammals is part of rural life, for these locations are also inhabited by bears (Japan, Romania), wolves (Poland, Romania) and bison (Poland), amongst others. That said, interspecies relations in these locations are not necessarily smooth and convivial. Rather, they can bring insecurity and vulnerability to humans and nonhumans alike, whilst also generating tensions between different knowledge practices and discourse. Perhaps, and at the risk of scaling up my own experiences, their vividness partially reflects the conspicuous absence of large mammals from the British Isles, deer excepted, most of which were extirpated as humans went about securing space and transforming the landscape. Interspecies encounters, and even their possibility, disappeared too. So, what happens when and where these ghostly absences become present again? How does a relatively benignant, British countryside change as it becomes reanimated, wilder and less certain? What does it mean if now unfamiliar cohabitants (re)appear and become more commonplace? What tensions might emerge as these animals reconfigure space, multispecies assemblages and problematise spatial and moral (b)orders?

How is such insecurity governed? This thesis, then, presents a fragment of the story of (re)introduced 'boar' in England<sup>3</sup>.

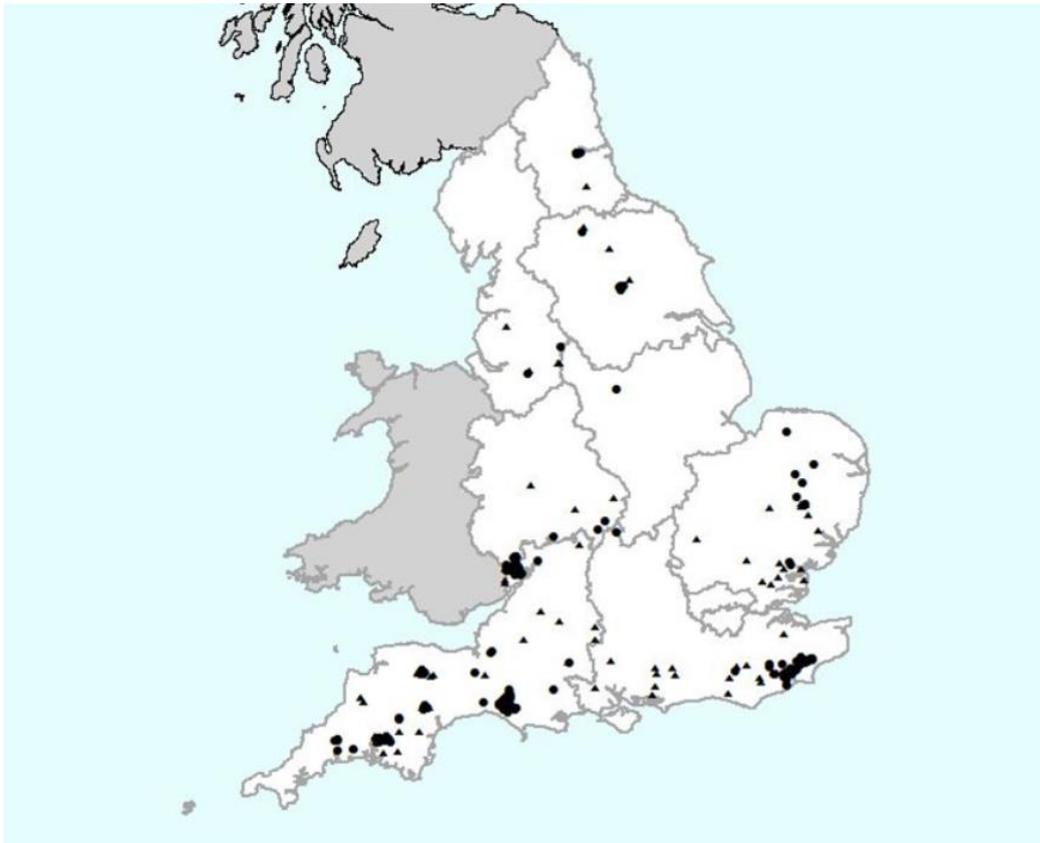
## **1.2 (Re)introducing UK boar**

Until the 1980s, boar had been dis-located from the British Isles for multiple centuries (Goulding 2003). Around this time, ecologically destructive EU agricultural policies meant grants were shifted to encourage the diversification of farms and engagement in 'unconventional enterprises' (Ilbery 1991). Amongst these included keeping rare breeds and novel livestock, a shift that led to a 'wilding' of farm space and introduced a range of incongruous animals to the UK, such as llamas, bison and ostriches, as well as some that were more uncanny, namely, boar (Booth 1995). As they returned to farms, almost contiguously, they began eluding them. From 1982/83-2009/10, there were 36 'recorded' incidents of boar escaping or being released in England (Figure 1) (Wilson 2014). These unsanctioned and unexpected events occurred through multiple, relational agencies: sometimes accidentally due to meagre farm infrastructure and inclement weather; at other times through furtive, intentional releases by activists and farmers; or else during numerous other, vaguely documented circumstances (Goulding 2003; Wilson 2014).

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<sup>3</sup> Here, there are two terms to clarify. From this point onwards I generally refer to 'boar' rather than the common name 'wild boar'. Firstly, this minimises when discussing contested moral categories such as wild/wildness, feral/ferality, hybridity/purity etc. Referring to 'boar', I feel, emphasises the ambiguity bound up in these ontological debates which is an important theme in this thesis. Secondly, many research participants referred to 'boar' and this is also how I referred to them with my supervisors. There is, of course, a gendered element to the term. Therefore, when I refer to 'boar' it is at a species scale, otherwise, I use the term 'sow' (to refer to females) or 'male boar' when distinguishing individuals.

Furthermore, I use brackets throughout for '(re)introduction'. This, similarly, highlights the ontological ambiguity of boar, their contemporary origins, and whether they are a returning or newly arriving population of animals.



*Figure 1- Reports of boar in England from 1989 to 2010 to Natural England (or previous incarnations): circles were ground-truthed, triangles were not. (from Wilson, 2014)*

Government research in the late 90s and early 00s investigating their unsanctioned (re)introduction also spawned a light flurry of academic literature outlining their ‘presence’ and ‘status’ in southern England (Goulding et al. 2003; Wilson 2003). These studies reported several distinct breeding populations persisting in woods within agricultural landscapes where boar sometimes rooted in grasslands and cereal fields (Goulding et al. 1998; Wilson 2004). Additionally, they highlighted how press stories had represented boar as a risk to British rural space and threatened hazardous, bio-insecure futures (Goulding and Roper 2002). These ‘free-living’ boar also stirred ethical questions: they were once “part of the native fauna” and could potentially “become naturalised” (Goulding et al. 2003, p. 15–16), though were of uncertain “genetic status” (Goulding 2001. p. 245; see also Goulding 2004). Much like those I had encountered elsewhere, these unofficially (re)introduced boar

appeared to unsettle understandings of nonhuman belonging as they made rural space appear increasingly fluid and messy.

This limited work prompts questions about the current situation. Whilst many wild populations have been fleeting and short-lived i.e. they were shot by farmers or recaptured, other populations have persisted for multiple boar generations, notably, in Kent/East Sussex, West Dorset and the Forest of Dean (Wilson 2014). The incremental emergence of small, isolated populations prompted a public consultation by the Department for Environment, Food and Rural Affairs (DEFRA) in 2006 (DEFRA 2006) and an Action Plan for their management in 2008 (DEFRA 2008). As boar have become a lingering and, in places, more visible presence, national and local media stories have increasingly reported affective multispecies encounters; interest and advocacy groups have formed to disseminate information and pressurise governing authorities' over management strategies<sup>4</sup>; and rural stakeholder organisations have voiced concerns about their risky presence. Though (re)introduced boar appear to have become increasingly divisive, controversial, and embroiled in various social-political tensions, to date there has been a lack of social science engagement with their unsanctioned return (see O'Mahony 2017; O'Mahony 2020). Notably, this has left outstanding questions about the ways they have been making and reconfiguring places; the multiple knowledges and practices that have contested their arrival; and the governance strategies that have unfolded to (b)order their presence.

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<sup>4</sup> The British Wild Boar Organisation ([www.britishwildboar.org.uk](http://www.britishwildboar.org.uk)) was the project of Martin Goulding who worked for the government on early boar research, set up a consultancy and authored some articles/commentaries on wild boar; Friends of the boar is a local advocacy group in the Forest of Dean (<http://friendsoftheboar.blogspot.com/>). Both groups, judging from their dormant websites and personal communications, seem inactive now. More recently, whilst completing my thesis another group, <https://theboaringtruth.org/home>, has been set up by 'wildlife lovers and conservationists' in the Forest of Dean.

To help examine boar politics in England, this thesis engages with a range of literature. Discussion, however, is primarily grounded through two prominent conceptual framings of contemporary human-nonhuman relations, namely, 'rewilding' and 'biosecurity'. Buller (2008) suggests these offer 'competing philosophies of nature', whilst, similarly, Lorimer and Driessen (2013) understand them as distinct "modes of modern nonhuman biopolitics" (p. 251). Though the principle concerns of biosecurity might, at times, converge with those of 'orthodox conservation', agriculture and forestry, rewilding proposes a more radical and uncertain ontology of wildlife (Lorimer 2015). Thinking through the friction of these two frames thus offers a path to help begin making sense of the challenges, tensions and ambiguities surrounding the unsanctioned (re)introduction of boar in England.

### **1.2.1 (Re)wilding**

Over the last couple of decades, there has been a growing shift towards conservation strategies that promise to reconfigure human-nonhuman relations, revitalise ailing social-ecological systems and redress the damage of (past) human practices. In Europe, "a quiet revolution" (Taylor 2013, p. 1) of scattered ecological restoration and species (re)introduction projects has gradually congealed into a more tangible and visible rewilding event, garnering public interest (see Monbiot 2014), giving rise to national and international advocacy charities (Jepson 2016; Sandom and Wynne-Jones 2019) and capturing the attention of policy makers. The diversity of this gathering of different theories, practices and contexts under the single moniker rewilding (Sandom et al. 2013a; Lorimer et al. 2015; Pettorelli et al. 2019) has troubled some scholars who suggest it hinders the long-standing objectives and coherence of conservation discourse and practices (Jørgensen 2015; Rubenstein and Rubenstein 2016; Hayward et al. 2019). In contrast, such heterogeneity is argued to reflect the varying, contingent environments within which rewilding is situated (Svenning et al. 2016; Gammon 2018; Sandom and

Wynne-Jones 2019). It is, in other words, relational and reflexive (Prior and Ward 2016).

Though diverse, rewilding practices might be broadly characterised as performing:

*process[es] of (re)introducing or restoring wild organisms and/or ecological processes to ecosystems where such organisms and processes are either missing or are ‘dysfunctional’” (Prior and Brady 2017, p.34)<sup>5</sup>*

This understanding of nonhuman nature as processual has emerged from evolving ecological knowledges that have highlighted the fluid and dynamic interconnectedness of ecosystems (Lindenmayer et al. 2008; Manning et al. 2009). These have problematised earlier assumptions that ecological stability and balance is desirable, and disturbance and flux are problematic (Wallington et al. 2005). Critically, rewilding is argued to be distinguishable from other forms of ecological restoration in its foregrounding of more-than-human ‘autonomy’ and ‘self-sustenance’, whether at ecosystem, species or individual scales (Prior and Ward 2016). In other words, the objective is to (gradually) reduce human intervention and, where possible, open up time and space for “autonomous biotic and abiotic agents and processes” to “co-product[e]...surprising ecological futures” (ibid, p. 133-134). Such ontological change not only necessitates the (re)creation of “coherent ecological spatial configuration[s]” (Lorimer et al. 2015, p. 44) allowing for multiple forms of ‘connectivity’ (Hodgetts 2018), but would also appear to challenge and unsettle established human-nonhuman relations and modes of (b)ordering wild life.

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<sup>5</sup> An increasing number of papers offer definitions and typologies of rewilding, often highlighting the distinction between active and passive, and European and North American forms. See, for example, Jørgensen (2015), Gammon (2018) and Pettorelli *et al.* (2019).

Whereas historic species (re)introductions have frequently been carried out to replete declining populations based on their intrinsic and cultural value, emphasising ecological functionality and relational processes assumes a different set of logics regarding nonhuman belonging (Lorimer and Driessen 2013, 2014, 2016; Seddon et al. 2014; Svenning et al. 2016). Species understood as ‘keystone’, those which significantly alter trophic cascades and propagate multi-scalar, multi-directional ecological effects; and ‘ecological engineers’, those which drive change through disturbance, have become increasingly valued by ecologists (Sandom et al. 2013a). The types of species (re)introduced varies in relation to geographical location and social-ecological context (Lorimer et al. 2015; Svenning et al. 2016). In the European context, the general focus has been on (re)establishing locally extirpated or surrogate herbivores- Heck cattle (as replacements for extinct aurochs), bison, horses, beavers- to instigate naturalistic grazing pressures and disturb habitats<sup>6</sup>.

These various ‘wild experiments’, replete with uncertainty (Lorimer and Driessen 2014), however, engender debates around conceptions of wildness, naturalness and nonhuman autonomy; the ways these materially and aesthetically manifest; and their relationship to the culturally situated politics of spatial-temporal belonging (Lorimer and Driessen 2013; Hourdequin and Havlick 2016; Prior and Brady 2017; DeSilvey and Bartolini 2018; Vasile 2018; Ward 2019). Rewilding has provoked and churned longstanding, multidisciplinary discussions about what, where and why certain species and ecologies are (de)valued (Philo and Wilbert 2000b; Buller 2004; Hobbs et al. 2006; Cassidy and Mullin 2007; Warren 2007; Hobbs et al. 2009; Simberloff 2015). These issues gather pertinence at a time when

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<sup>6</sup> The websites for prominent rewilding charities in Britain (<https://www.rewildingbritain.org.uk/>) and Europe (<https://rewildingeurope.com/>) list various exemplar projects.

human-nonhuman relations are rapidly changing, not just in relation to conservation initiatives that deliberately disrupt past and future imaginaries, but amidst the wider context of the Anthropocene (Collard et al. 2015; Lorimer 2015).

Though a steadily growing body of critical social science work has addressed the changing spatial-temporal and moral politics of sanctioned (re)introductions (Lorimer and Driessen 2013; DeSilvey and Bartolini 2018; Vasile 2018), habitat management (Prior and Brady 2017; Wynne-Jones et al 2018; Sandom et al. 2019) and practitioner understandings of wildness (Deary and Warren 2017; 2018), less attention has been paid to the unsanctioned or spontaneous rewilding occurring beyond the formalised spaces and mechanisms of conservation practice (Buller 2008; Drenthen 2016). As Hearn et al. (2014) note, rewilding is not necessarily “a consciously and carefully designed plan of interlinked reserves” (p. 54), but something that also happens unintentionally, unofficially, and through processes of regeneration, succession and recolonization. These “unplanned experiment[s]” (ibid, p. 61) are evidenced throughout continental Europe, where widespread rural depopulation and abandoned pastoral landscapes have facilitated what might be termed ‘passive rewilding’, as once carefully managed landscapes de-domesticate (Navarro and Pereira 2015; Pettorelli et al. 2019). Though some of these evolving landscapes have been appropriated into rewilding initiatives (Jepson 2016; Lorimer and Driessen 2016), including experiments (re)introducing bison (Vasile 2018), horses (DeSilvey and Bartolini 2018) and bears (Knight 2016), they have also facilitated the resurgence of extant charismatic fauna, such as wolves (Buller 2008; Boitani and Linnell 2015; Knight 2017) and various ungulates, including boar (Hearn et al. 2014). Rewilding, whether intentional or not, “is an ‘active outcome’ of

political world making” (Buller 2008, p. 1589)<sup>7</sup> and the emergent, immanent potential of nonhuman life (Lorimer, 2015).

Importantly, this faunal and floral resurgence, or ‘auto-rewilding’ in Tsing’s (2017) words, does not merely emerge from the temporal ruptures of distant, once domesticated landscapes, but also from amidst or in proximity to places where humans and their practices are still dominant. In other words, understanding rewilding, and its corollaries wildness and wildlife, as relational processes and lively ‘achievements’, as opposed to territorialised human practices, shifts emphasis to the immanent potential for nonhumans to exert agency as part of entangled, interconnected naturecultures (Lorimer 2015; see also Whatmore 2002). Rather than cleaving humans and nonhumans apart, rewilding might conceivably bring them closer together as nonhumans, exerting various degrees of autonomy and difference, shift the spatial-temporalities of their human and nonhuman relations (Collard et al. 2015; Prior and Ward 2016; DeSilvey and Bartolini 2018; Vannini and Vannini 2019; Ward 2019). Whilst acting through such relational autonomy might be celebrated, it can also trouble hegemonic perceptions about the (un)acceptable presence, behaviour and mobilities of wild lives. Wildness, or, rather, ferality, therefore, potentially blurs moral and spatial boundaries between domestic/wild and natural/cultural space, generating tensions and churning a range of biological and ontological insecurities (Buller 2008; Lorimer and Driessen 2013; Crowley et al. 2017b; Knight 2017).

### **1.2.2 Securing**

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<sup>7</sup> Buller cites Hinchliffe and Bingham (2008).

At its simplest, biosecurity practices are concerned with “making life safe” from the vulnerability and multiplicity of relations (Bingham et al. 2008, p. 1528). More specifically, it describes “the attempted management or control of unruly biological matter, ranging from microbes and viruses to invasive plants and animals” (Barker et al. 2013, p. 5). Though the objectives of biosecurity are not necessarily new-enabling life and its continuity has always been a vital matter- its contemporary forms are frequently diverse assemblages of “knowledges, techniques, practices and institutions” (Braun 2013, p. 45). These heterogenous gatherings reflect social-political concerns over the velocity and geographic extent which ‘biothreats’ might travel in the modern world (Bingham et al. 2008; Barker 2015) and the complex, relational situations from which they might emerge as threatening (Hinchliffe et al. 2016). As worlds appear more interconnected and, consequently, precarious, governing authorities increasingly outline frameworks of intervention. One such example is the 2018 UK Government ‘Biological Security Strategy’, which covers “the protection of the UK and UK interests from biological risks (particularly significant disease outbreaks) whether these arise naturally, or [through]...an accidental release... or a deliberate attack. These risks could affect humans, animals or plants”(p. 9)<sup>8</sup>.

Biosecuring life is an ongoing, processual ordering and regulating of ever-emergent, risky lives (Hinchliffe and Bingham 2008). Primarily, it is spatially enacted through a variety of boundary-making and (b)ordering practices, whether the territorialisation of sites and places, or else the bodies of lively, mobile organisms it seeks to govern (Barker 2015; Braun 2013; Buller, 2013; Enticott 2008; Hinchliffe et al. 2016).

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/730213/2018\\_UK\\_Biological\\_Security\\_Strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/730213/2018_UK_Biological_Security_Strategy.pdf)

Regulating such ‘borderlines’, therefore, often relies upon the ontological and material separation of the desirable from undesirable, the ordered from the disordered (Hinchliffe et al. 2013). Multiple subjects are commonly framed as at risk, notably agricultural and food production systems; human populations; and natural environments and biodiversity (Bingham et al. 2008; Buller 2008; Hinchliffe and Bingham 2008; Collard 2012; Outhwaite 2013; Enticott 2014a; Hinchliffe et al. 2016).

Much research has followed viral and bacterial pathogens along topological networks and through their heterogenous assemblages which include larger forms of nonhuman life, such as birds (Hinchliffe and Lavau 2013; Wilbert 2006) or sheep (Donaldson and Wood, 2004; Law and Mol, 2008), often as hosts, vectors or vulnerable recipients. However, the material practices of security also focus on more visible biothreats, whether “infestations” of ‘non-native’ flora (Barker 2008, p. 1600) and fauna (Lavau 2011; Lien and Law 2011), or the “almost visceral” risks presented by large carnivores (Buller 2008, p. 1583; see also Collard 2012). In the case of the latter, this alters the scale and understanding of security, from virtual economies and nonhuman populations to a concern for the individual health, physical safety and “ontological wellbeing” of humans (ibid, p. 1583). Biosecurity here entangles with orthodox conservation practices and ethics which rely on a range of spatial and moral (b)orders and logics to organise life. Categories such as native-alien, invasive, wild-domestic-feral become part of security strategies to classify ontological belonging and ecological security (Donaldson and Kymlicka 2011; Fall 2013; Palmer 2010).

### **1.3 Feral bo(a)rderlands and feral rewilding**

Decolonising the focus of rewilding from human-initiated spatial practices to include more uncoordinated and spontaneous relational processes provides a useful frame to consider contemporary boar politics. Globally, boar are classified by the IUCN as of “least concern” (Oliver and Leus 2008, p. 1) and throughout their ‘native’ Eurasian range, as well as in places where they have been introduced over the last 500 years, their populations are steadily growing and geographies expanding (Massei et al. 2015; Keuling et al. 2017). Boar are creative, problem-solving and reflexive (Morelle et al. 2015) and their flourishing has been facilitated by an admixture of biological, ecological, environmental and political constituents (Bieber and Ruf 2005; Vetter et al. 2015). As their abundance increases and geographies broaden, they have increasingly been framed as a security concern. Boar, as biothreat, cause agricultural ‘damage’, generate risky encounters with recreationalists and drivers, and host infectious diseases (Barrios-Garcia and Ballari, 2012; Massei and Genov, 2004; Massei et al, 2011; Schley and Roper, 2003). In much of their ‘introduced range’, ‘feral’ boar/pigs are perceived as damaging local ecologies and endangering endemic species through their unfamiliar, ‘non-native’ presence and ‘invasive’ capacities (McClure et al. 2015; Seward et al. 2004; Snow et al. 2017). Human-boar relations, therefore, are complex and appear increasingly problematic, something reflected in their growing interest for social scientists (Hearn et al. 2014; Frank et al. 2015; Keuling et al. 2016; Storie and Bell 2017).

So, how does this relate to UK boar? As a once ubiquitous nonhuman presence, they have been represented as “excellent”<sup>9</sup> candidates for (re)introduction according to the ecological objectives of rewilding practices. That is, their ‘ecological engineering’ potentially creates mosaics of disturbance and

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<sup>9</sup> <https://www.rewildingbritain.org.uk/rewilding/reintroductions/wild-boar>

regeneration within woodland and grassland habitats which regenerate and revitalise soil ecologies (Sandom et al, 2013a, 2013b). Moreover, it is also argued there is a moral imperative for their (re)introduction, along with other extirpated species, based upon their historic presence and human-initiated disappearance from the British Isles (Leaper et al. 1999; Goulding 2003; Monbiot 2014). And yet, as already noted, despite the gathering academic and practitioner interest in formalised rewilding events, the way in which the unsanctioned (re)introduction of boar has unfolded socially, politically and ecologically has received very little academic attention. This thesis, therefore, contributes both to knowledge surrounding human-boar relations, particularly those in the UK, as well as to work widening rewilding discourse beyond prescribed human practices to probe its more emergent, spontaneous, processual and relational elements.

In 2008, the DEFRA Action Plan underlined unofficially (re)introduced boar were to be understood as 'feral' (DEFRA 2008). For this reason, I have conceptualised this as an example of 'feral rewilding', a frame deliberately imbued with political implications (O'Mahony, 2020). Simplistically, this highlights their normative, political categorisation and distinguishes their unsanctioned (re)introduction from official rewilding practices. However, ferality is an ambiguous category that reflects disorder, mess and undermines the 'purification' of modern worlds (Latour 1993; Haraway 2008). Feral rewilding foregrounds the ethical-political implications and messy contestations that might encompass unofficial, emergent rewilding events. Not only does it foreground the blurring of spatial and moral boundaries, but it also reflects how pre-existing, multispecies relations are unsettled by unfamiliar, (re)introduced cohabitants. An emphasis on ferality, therefore, highlights the relational autonomy and agential capacities of more-than-human actors to work within and beyond human boundary-making practices.

The feral rewilding of UK boar shows how realities are complex and messy (Law and Mol 2002; Law 2004; Murdoch 2006; Hinchliffe 2007). Rather than a simple and

singular story, their (re)introduction is one of “multiplicities” (Law and Mol 2002, p. 7); boar themselves, the places they inhabit and the (bio)politics encompassing their presence induce countervailing modes of ordering, ethics and logics. Sometimes these are complementary, at other times they jar uncomfortably. Boar are heuristic, problematising hegemonic human-nonhuman relations and practices of wildlife conservation and management, often arranged through closed systems of classification, categorisation or simplified scalings and (b)orders.



To help make sense of the feral rewilding of boar, this thesis works with the concept of ‘borderlands’. Citing Sassen's (2008) explanation that these are “marked by the intersection of multiple spatio-temporal [dis]orders” (p. 392), Hinchliffe et al. (2013) consider borderlands to be:

*spaces in the making...where borders are continually being restated through the juxtaposition of different elements, some close up, others folded in from afar, detached and re-embedded in ways that give rise to new and novel arrangements through different types of engagement (p. 537).*

Such spaces are constituted of a range of human-nonhuman elements, rhythms and logics that intermingle topologically, topographically and with differing intensities. Whereas Hinchliffe et al. explicitly interrogate the ‘intra-active’ nature of disease security, this thesis conceptualises the messiness, ambiguity and precarity of feral rewilding more inclusively. It is interested in how these bo(a)nderlands emerge and are made through different meanings, ontologies, spaces, places, multispecies relations and heterogenous practices. And, how logics and experiences of (dis)order are practiced, (re)produced and negotiated. Importantly, as with other ‘complexities’, the thesis pays attention to how spatial-temporal relations and atmospheres “flow and churn” (Law and Mol 2002, p. 11).

However, while they might signify spaces of tension and strain, borderlands can also be conceptually generative. More than merely descriptors, they are performative and reflexive, opening up possibilities for recombinant research and heterogenous knowledges to better make sense of complex social worlds (Wolch and Emel 1998; Strathern 2004; Hinchliffe et al. 2013; Hinchliffe et al. 2016; Enticott 2017). Whilst material borderlands unsettle spatial-temporal relations, discursive borderlands can blur disciplinary boundaries. Such hybridity seems particularly important for rewilding, which brings together and unsettles different biopolitics, philosophies and ontologies of nature (Buller 2008; Lorimer and Driessen 2013; Lorimer 2015). Here, then, connections can be made to work from a range of literature which has increasingly paid attention to the fraught 'human dimensions' of 'conservation conflicts' (Woodroffe et al. 2005; Redpath et al. 2013; Baynham-Herd et al. 2018), the political ecologies of wildlife management (Adams and Mulligan 2003; Barua 2014a; Srinivasan and Kasturirangan 2017; Evans and Adams 2018) and the geographies of environmental knowledge 'controversies' (Crowley et al 2017; Maye et al. 2014; Sandover et al. 2018; Whatmore. 2009).

Though not always couched in such terms, much of this work converges through an interest in exploring complex human-nonhuman entanglements, as well as the power dynamics involved in organising nonhuman life and making and disseminating knowledge. Furthermore, they show how political matters both emerge and gather around more-than-human actants, as well as become bound up in wider political tensions. The feral bo(a)rderlands and rewilding explored in this thesis, thus, contribute to this borderland literature and show how (re)introduced species and rewilding unsettle and (re)form the arrangement, production and organisation of space. Importantly, it does so by paying attention to the specific materialities and emplaced nature of these, as well as to the broader discursive debates at hand.

#### **1.4 Researching Feral Bo(a)rderlands**

If feral UK bo(a)rderlands are uncertain and disorderly, it is important for a research methodology to reflect this. Rather than simplifying through ordered accounts or definitive typologies, it is important to try and find alternative modes of relating, gathering things together and attending to more-than-human matters (Law and Mol 2002; Law 2004; Tsing 2015; van Dooren et al. 2016). In Law and Mol's (2002) words, "[d]escribing the world while keeping it open" is critical, as complexities "are always there, somewhere, elsewhere, untamed" (p. 16). Indeed, thinking with ferality throughout this thesis is a reminder that relations, places, practices and politics are always unsettled, incomplete and shifting. Feral bo(a)rderlands, therefore, probably necessitate 'feral methodologies'. Conceived akin to other approaches 'diagramming' (Hinchliffe et al. 2016) and 'tracking' (Barua 2014a; Lien 2015; Crowley et al. 2017b) the topological and topographical relations between humans, nonhumans and their environments, my methodological approach sought to connect lives, species, places and politics together.

Following the relational politics of feral UK bo(a)rderlands was challenging, partly due to the lack of pre-existing research and the importance, therefore, of keeping things open. Moreover, I particularly wanted to address and build on a lack of engagement with the situated, embodied, quotidian and material aspects connecting rewilding, biosecurity and place. Therefore, to contribute to other descriptively rich work in more-than-human and animal geographies (see Buller 2013a; Philo and Wilbert 2000; Whatmore 2006), Science and Technology Studies (STS) (Abram and Lien 2011; Law and Lien 2013) and other multispecies studies (Kirksey and Helmreich 2010; Tsing 2015; van Dooren et al. 2016), my 'feral methodology' was ethnographic, a 'slow method' (Law and Singleton 2013) that required and allowed time and space.

This, primarily, was situated within one geographical locality, the Forest of Dean. Located between the Severn and Wye rivers on the southern end of the English-Welsh border, it is one of the largest forests in southern England and has a distinct

cultural landscape. According to official accounts, the local 'feral' boar population originally spawned from a farm to the north of the forest, near Ross-on-Wye, from where 30 boar escaped in the late 90s (DEFRA 2008; Stannard, 2011). This group, surviving and breeding mainly in small patches of woodland surrounded by farmland, persisted until another event, in 2004, when 60 boar were released to the west of the forest, near Staunton, in mysterious circumstances that were never resolved; no owner nor culprit was identified by authorities. At a time that predated policy, these two groups were left alone and, eventually, established as single population in the main forest several years later. Since these two events, over the last couple of decades it is officially estimated the Forest of Dean boar population has since grown to 1635 in 2018/2019, the largest in the UK (Gill and Waeber 2019).

Undertaking an ethnography in the Forest of Dean enabled me to explore the different actions, practices, materialities and mobilities that are entangled with and make up boar assemblages. However, I also followed connections flowing to, from and through this location to bring this specificity into relation with wider political ecologies. Carrying out a slow piece of research was important as there is very little social science research into boar in the UK, let alone of a qualitative nature, and I was not entirely sure what I was looking for. Beyond the representations of UK bo(a)nderlands I had gleaned from news stories, boar felt somewhat elusive. I wanted to track these in as many ways as I could, physically and discursively, to get closer to understanding the affective nature of their (re)introduction, and the ways in which boar, people and politics have negotiated their arrival. Therefore, my feral methodology involved a breadth of evolving methods- animal tracking and camera trapping; observations of daily life and formal meetings; mobile and static interviews; and document analysis. By interweaving these different techniques, I hoped that the flowing, churning complexity of boar relations would emerge. Following this deductive and grounded research methodology, my research questions also evolved in response to different themes and data that emerged both in relation to the specificities of the Forest of Dean, as well as conversations and knowledge gaps surrounding boar, rewilding and biosecurity more broadly.

More formally, my research aims to:

*To explore how (re)introduced boar as a mode of feral rewilding are re-configuring social landscapes and human-nonhuman relations.*

Literature on rewilding has tended to focus on the spaces and nonhuman lives prescribed within conservation practice. This thesis, however, asks whether and in what ways feral rewilding, as an unsanctioned or unanticipated event, brings new spatial, temporal and moral relations. By providing an empirically rich study of some of the human-nonhuman entanglements that make up the Forest of Dean, the research reveals the relational and contingent nature of the places, practices and politics that co-constitute feral bo(a)rderlands. The thesis seeks to address three main research questions.

*1- Have (re)introduced boar reconfigured pre-existing relations, rhythms and understandings of place?*

The growing discussions around rewilding and (re)introducing species often overlook the situated, everyday performances that entangle humans and nonhuman lives. To understand how the presence of (re)introduced boar has altered the material and affective co-constitution of place, I first focus on some of the different lives that inhabit the Forest of Dean. How do seasonal changes in boar mobilities and behaviours bring new possibilities of encounter? How might this change the aesthetic landscape and atmospheres of risk? How do different actors experience and negotiate these?

*2- How have government wildlife agencies sought to know and secure the presence of boar?*

This question addresses the way officially produced knowledges and practices, frequently the means through which relationships with wildlife are mediated, have unfolded in relation to boar. I seek to understand how socio-technological assemblages have formed around unfamiliar, (re)introduced boar. What kinds of knowledge and practices are assembled to make boar a political matter? How do knowledges of boar and their lively assemblages interrelate with practices of regulation? How might the relational agencies of the more-than-human world affect wildlife management, field-working, and the ability to produce knowledge of wildlife?

*3- How have strategies and modes of governance been implemented and contested?*

(Re)introduced boar in the British countryside offer a new material and discursive wildlife politics in the UK. This question asks how policy has framed their presence and how it is expected to be governed? How has responsibility and authority been shared, embraced and avoided. When and where is governance most problematic? To what extent is this contested and which voices might be included or excluded? I seek to understand how national politics is enacted and connects to the local and long-standing social-political relations of the Forest of Dean.

## **1.5 Thesis Outline**

The thesis is arranged around eight subsequent chapters. First, in Chapters 2, 3 and 4, I consider and bring together a range of literature to provide further background to the thesis and to form a conceptual and theoretical frame for the research. This literature is multidisciplinary and drawn from ecology, conservation science, more-than-human geography and anthropology. These chapters outline the key themes that run through the thesis and build an argument that deepens spatial-temporal understandings of the relationship between rewilding, biosecurity and the politics of place. Chapter 5 centres on the methodological approach to data collection, how

and where this was undertaken. It offers a story of my research, the methods applied and some of the contingencies of fieldwork. Additionally, by introducing the Forest of Dean, it helps lay out some of the complexities and contestations that follow.

Chapters 6, 7 and 8 focus on the research questions outlined above, as well as the overarching conceptual themes that thread through the thesis. They provide rich descriptions of the unfolding lives, practices and politics entangled with boar. Chapter 6 considers how the multiple lives and performances that co-constitute the Forest of Dean are affected by (re)introduced boar. Following seasonal temporalities, this chapter explores how the agential capacities of boar generate new and reconfigure pre-existing relationships with place, highlighting how living with unfamiliar nonhuman co-habitants might be simultaneously affirming and unsettling. Chapter 7, similarly, engages with a diversity of material relations and focuses on the ways in which governing agencies have made boar a political matter and, subsequently, a security concern. It considers how practices of regulation and monitoring have evolved and become closely interrelated. It also reveals how boar generate new spatial relations and connections between the Forest of Dean and other UK locations. Finally, Chapter 8 addresses how boar policy and governance has emerged and been implemented in response to their unsanctioned wild presence. The chapter primarily focuses on the developing situation of boar in the Forest of Dean, and ways different organisations, groups and individuals have been involved in enacting and contesting strategies of governance. It shows how different logics and ontologies of boar become in embroiled in broader tensions relating to local politics.

To conclude, chapter 9 summarises these findings and brings together the key themes to consider how multiple uncertainties surrounding the unsanctioned (re)introduction of boar have contributed to a contested, feral bo(a)rderland. It ends by considering the complex relationship between feral rewilding, biosecurity

and wildlife governance, the broader implications of this research, and possible futures paths of exploration.

## (B)ORDERING WILDLIFE I: MULTISPECIES RELATIONS

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### 2.1 Introduction

This chapter continues the theme of the opening stories in Chapter 1 by considering further the ways humans and boar are entangled in one another's lives. It begins by conceptualising human-nonhuman relations through post-structural approaches that, broadly speaking, unsettle binary ontologies and emphasise the connectedness of naturecultures. In particular, it considers two ways in which nonhumans have been conceptualised; as companions and monsters. The chapter then moves on to pay attention to boar specifically, drawing on a range of research that, firstly, highlights historic symbiotic relationships between boar, humans and pigs, before discussing research and knowledge of boar presence and ecologies in contemporary Europe. Rather than suggesting that wider happenings can be neatly scaled down to the UK or, more specifically, the Forest of Dean, the chapter intends to contextualise the thesis within a wider temporal and spatial frame. By paying attention to stories speaking of human-boar closeness and inter/intra-action elsewhere, the chapter provides important context when later considering their relations, place, as well as ontological discussions about purity and belonging.

### 2.2 Relational life

Contemporary human-nonhuman relations are increasingly framed within the context of the Anthropocene, a concept eroding binary distinctions between nature and culture and inferring humans are inherently bound up with nonhuman worlds

(Castree 2014a; Lorimer 2015)<sup>10</sup>. The Anthropocene, therefore, “simultaneously *expand[s]* and radically *undermine[s]* conventional notions of agency and intentionality” (Johnson et al. 2015, p. 444, emphasis in original). Theoretically, it has provided space for a convergence between the natural and social sciences by “collapse[ing]...the age-old humanist distinction between natural history and human history” (Chakrabarty 2009, p. 201). It is thus a boundary event in more ways than one (Haraway 2015), unveiling the myth of an external, separate and singular Nature and potentially opening ways for a more ‘multi-natural’ politics inclusive of difference, connectedness, uncertainty and materiality (Latour 2004b; Lorimer 2012). Within the social sciences and humanities, the Anthropocene has been used conceptually to frame questions about the ways our responsibilities, ethics of care and modes of ordering life ought change if humans are more implicitly tied to the insecurity of nonhuman existence (Van Dooren 2014; Braun 2015; Lorimer 2015; Head 2016; Rutherford 2018). Relatedly, and of more relevance to boar, it also provokes different questions about how humans should live with and regulate proliferate and unruly life whose flourishing in Anthropocene conditions generates insecurities and uncertainty (Barker et al. 2013).

This critical work has emerged from longstanding developments in post-structural, (post) actor-network and vitalist, bio-social theories that have sought to dissolve binary nature-culture ontologies and, instead, frame worlds as relational (Latour 2005; Murdoch 2006; Coole and Frost 2010; Ingold 2011). This has laid foundations for researchers to increasingly pay attention to the material, more-than-human and animal agencies that co-constitute realities (Emel et al. 2002; Whatmore 2006

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<sup>10</sup> Rather than digress into its complexities, I would point the reader towards stimulating literature debating its semantics (Haraway, 2015; Malm and Hornborg, 2014; Moore, 2017) and temporalities (Gibbard and Walker 2014; Lewis and Maslin 2015).

Hinchliffe 2007; J Lorimer 2012; Buller 2013a). Though these theoretical approaches differ, taken broadly they propose messy worlds comprising of dynamic assemblages of humans, animate and inanimate nonhumans, technologies, artefacts and institutions which exist through multiple temporal and spatial contexts (Law 2004; Murdoch 2006). Life is made up of heterogenous relations, “mixtures of the natural and social and the human and the nonhuman” (Law 2004, p. 3). Similarly, time and space is relational, “not pre-existing...(but) undergoing continual construction exactly through the agency of things encountering each other in more or less organized circulations...a co-product of proceedings” (Thrift 2009, p. 96).

Just as collective life and timespace are made up of multiple relations that shape character, individual forms- animals (including humans) and plants- are also more than merely bound objects or, in Thrift’s words, “flesh surrounded by an envelope of skin” (ibid, p. 103). Rather, they are complex assemblages of “other ‘dividual’ parts of bodies and things and places...constantly reacting to encounters and evolving out of them” (ibid, p. 103). Importantly, these are not merely the biological entities we ordinarily associate with a body- limbs, organs, blood, tissues, leaves, roots etc- but also other living entities, such as microbes, bacteria and viruses (Hinchliffe 2007). Therefore, animals do not merely ‘inter-act’ with other entities, but also ‘intra-act’, affecting from inside as well as outside (Hinchliffe et al. 2016). As opposed to being static and bound, therefore, it is more appropriate to think of animals (and plants) as “ever-emergent outcomes of processes of growth” that progress in relation to external and internal factors (Ingold 2011b, p. 8). Thinking of lives as ‘becoming’ instead of ‘being’, therefore, emphasises the primacy of both movement and inter-connection. This maps with relational approaches more broadly which emphasise “movement as origin rather than endpoint and...travelling identities over fixed notions of belonging” (Thrift 2009, p. 99). Internal and external movements and processes, therefore, allow all animals and plants, to exert agency and affect others:

*[F]rom the primary somatic movement of the heartbeat, respiration and circulation, from other movements which collectively become the animal (human or otherwise)...an achievement of multiple motions in space [but] an achievement that, in motion, is constantly changing, never fixed, and in response to, the ever-shifting and chaotic surrounding world and its affordances. (Buller 2012, p. 142)*

These multifarious movements, or ‘lines of becoming’, cluster together, giving the impression of bordered things rather than complex, creative processes in motion, congealing pasts, presents and potential futures (Deleuze et al. 2004; Ingold 2011). Ingold (2008a) suggests these “generative movements of life” have been explained away through “boundaries of exclusion” (p. 10), turning organisms into ‘objects’ within a world, rather than as subjects that co-produce worlds (see also Hinchliffe 2007; Haraway 2008; Buller 2013a). This has produced an ontology reducing nonhumans to pre-existing and singular entities that merely ‘occupy’ worlds, as opposed to humans who are understood as ‘inhabiting’ them, a distinction critical to the ways nonhumans have been ordered and regulated through modern conservation and biosecurity practices (as explored in Chapter 3).

Considering individual and collective life as processual, spontaneous and emergent offers a way to think about how organisms- in the case of thesis, humans, boar and other nonhumans- are interrelated. This might be through proximate, emplaced encounters or more general spatial co-habitation. Tsing (2013) refers to this constant concurrence of embodied difference as reflecting the “more-than-human sociality” (p. 27) that makes up the world. This is diverse and co-produces different types of relations:

*[P]lants, animals, and non-living matter may co-evolve and produce opportunities and constraints for one another through all manner of relations including co-operation, symbiosis, parasitism, co-habitation, opportunism as well as competition. (Hinchliffe 2007, p. 25)*

Humans are, in Haraway's (2016) words, "relentlessly becoming-with" others and perpetually "in-encounter" (p. 12). Though verbal language and rationality has been used to ontologically border humans and nonhumans, embodiment, gestures, movement, emotion and affect mean multispecies intersubjectivities are performed through a "shared corporeal and fleshy communality" (Buller 2012, p. 140). These are mutual, aesthetic achievements based on somatic sensations and aesthetic connections, rather than unidirectional, anthropocentric relations steered entirely by intellectual meaning (Johnston 2008). Understanding life in such a way not only suggests the need for more ethical engagements with nonhuman species, but also to pay attention to intra-species differences amongst individual and groups (see Bear 2011a; Hinchliffe et al. 2005a; J Lorimer. 2010; Nygren and Jokinen 2013).



To help consider such relationality in the context of humans and boar, here I briefly pay attention to several important concepts commonly evoked in multispecies studies. As the thesis progresses, these are useful in helping connect relational thinking with the tensions surrounding rewilding, (re)introductions and biosecurity. Firstly, Haraway (2003) has proposed that many nonhumans exist as "companion species", a category she suggests is "more heterogenous...than companion animals" (p. 15) and gives space for the "less shapely and more rambunctious" aspects of co-existence (Haraway 2008, p. 99). Interspecies relationships are framed as co-constituted, co-evolved, collaborative and existing through complex material-semiotic formations (Haraway, 2004). Though never settled and always requiring effort, certain companionly relations- notably, in Haraway's case, humans and dogs- reveal the possibilities of interspecies conviviality. This is not based exclusively upon human domination over others, but diffused through mutually beneficial, affective arrangements that bring different forms of life and ways of knowing together. A range of work has been conceptualised through such a lens, from more obvious pet and livestock relations (Brown and Dilley 2012; Maurstad et al. 2013; Power 2008) to less likely co-habitants, such as fungi (Tsing 2012) and elephants (Lorimer 2010b).

Though companionly entanglements are often tense and require interspecies reflexivity, the concept has been questioned for insufficiently addressing problematic and dysfunctional relations (Lorimer and Driessen 2013). By being rooted in the affirmative potential of actual encounters, it appears to insufficiently address the affective capacities of virtual and imagined encounters, as well as inter/intra-actions with the unfamiliar and unknown. Many interspecies relations are risky, unsettle identities and perhaps justifiably ought be treated with concern, distance and non-companionship, rather than embraced (Lorimer and Davies, 2010). As Ginn et al. (2014) explain, while companionship is one way in which animal geography and multispecies studies have “tended to emphasise co-presence, vitality, and affirmative ways of ‘being with’”, there is a need to be more prudent about how difficult it is to share with nonhuman others, “when the creatures are awkward, when togetherness is difficult, when vulnerability is in the making, and death is at hand” (p. 114).

There has, therefore, also been a concurrent interest in the more ‘monstrous’ side of relations, ones that differ from but are not necessarily incompatible with companionship. Indeed, such relations are multiple. Monsters, Swanson et al. (2017) suggest, are organisms which are “wonders of symbiosis” whilst also embodying “the threats of ecological disruption” (p. M2). They exist through close entanglements with others, companions of varying forms but ones bringing uncertainty, danger and risk. These might manifest through human intervention and attempts to order other lives, or else influence ecologies in more autonomous, intra-agential and insidious ways. For example, altering animal genetics; purifying landscapes through ‘pest’ eradication; simplifying ecosystems; or else moving lives from one place to another, can have monstrous consequences (Hinchliffe and Bingham 2009; Davies 2013; Dixon and Ruddick 2013; Lorimer and Driessen 2013). In Lorimer and Driessen's (2013) words:

*[T]he monstrosity and hybridity of monsters is (therefore) not ontologically stable...but an emergent effect of particular orderings of normality and difference. Monsters are monstrous for crossing categories...straddling species groupings...by being a physical threat as by endangering the cultural order through which we make sense of the world. (p. 251)*

Monsters are categorically complex, crossing human boundary-making practices and bringing disorder to systems that simplify the modern world. The monstrous and feral, as described in Chapters 3 and 4, share similarities. Importantly, different ontologies make monsters in diverse ways. They might be “promoted as categorical anomaly, as abject force, and as risky/promissory ‘arrivant’” (ibid, p. 251). Monsters, therefore, are multiplicities, simultaneously biologically and ontologically threatening, as well as charismatic (Dixon 2013; Lorimer and Driessen 2013). Kristeva (1982) explains the abject, the monstrous, as that “what disturbs identity, system, order. What does not respect borders, positions, rules” (p. 4). By destabilising and permeating (b)orders, these awkward multispecies relations reflect the ways in which humans unintentionally generate their own risks by creating (b)orders, as much as the agential animals that unsettle them (see Lorimer and Driessen, 2013; Rutherford, 2018).



By introducing life as relational and considering two ways in which nonhumans have been conceptualised, I have provided a background to many of the discussions that follow not only in this chapter, but the thesis more broadly. From here, the following subsection turns attention more specifically to human-boar relations and considers how they have co-evolved and co-existed with one another.

### **2.3 Human-bo(a)rderlands**

This subsection is broad in spatial-temporal scale and deals with boar at a coarse species-scale, the commonplace 'ontological cut' used to order wildlife (Lorimer 2015). Addressing animals at such an ontological scale risks is often criticised for discounting nonhuman difference and complexity. Though individuals and their multi-scalar collectives are "always multiple, multiplying their forms and associations" (van Dooren et al. 2016, p.1; see also Bear 2011; Johnson 2015; Forsyth 2017), it is also argued species are a pragmatic and "valuable sense-making tool" (Kirksey 2015b, p.758). Using a range of literature that has emerged from recent developments in zooarchaeology and genomic research, from here I show that spatial and moral relations with boar, historically, have been far more complex than simple classifications might suggest. I show that boundaries between wildness and domesticity are messy, an important theme evoked in discussions around boar belonging and their rewilding.

### **2.3.1 Historic relations**

Though this thesis focuses on 'wild' boar, understanding their contemporary human relations benefits from a brief consideration of domestication. Theories of domestication are diverse, with traditional interpretations storying a unidirectional process enacted through human agency and exceptionalism (Russell 2002). For example, it might be framed as a process where "human community...maintains complete mastery of...[nonhuman] breeding, organisation of territory and its food supply" (Clutton-Brock 2002, p26). Regarding pigs/boar, Evin et al (2017) suggest "the domestic pig is among the first animals to have been domesticated", in line with their description that domestication describes how "animals and plants are moved from the natural environment to a new one controlled by man" (p. 39). Boar (and other nonhumans) are framed as passive objects tamed for human utility. However, recent work has increasingly rethought and questioned such unidirectional agency, instead framing relations through more symbiotic, multispecies entanglements (Russell 2002; Cassidy and Mullin 2007; Tsing 2012; Head 2014). As Lien (2015) suggests, domestication should be understood as a

“two-way process” as opposed to one purely of nonhuman “control and confinement” (p. 3).

Rather than isolated moments of capture and control, domestication events are multiple and drawn out processes. Vigne (2010) suggests these have varying intensities of mutuality and might move backwards and forwards through stages of anthropophily; commensalism; control in the wild; control of captive animals; extensive and intensive breeding; and the potential becoming of pets. These relationships intensify and de-intensify, or else stabilise and destabilise. Zeder (2012) suggests specific circumstances mean animals have domesticated along different paths based upon mutually inclusive commensal relations, hunter-prey relations, or else through more specific means. Genomics and zooarchaeology suggest human-pig-boar assemblages co-evolved through composite commensal-prey relations (White 2011; Zeder 2012). This occurred as spatial movements overlapped and boar either consumed food and human refuse in settled communities, or else foraged for similar resources in proximity to humans (Watson 2004)<sup>11</sup>. Simultaneously, they might have been a prey species, though one managed selectively. Essig (2015) lucidly describes this symbiotic inter/intra-activity:

*[Pigs] became domestic through their relationship not with humans as hunters but rather with humans as villagers....it was a more intimate relationship, involving everyone who lived in town...They cleaned up waste that accumulated in each village they occupied: dead animals,*

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<sup>11</sup> Rather more speculatively, Watson (2004) suggests the first locations of boar-pig domestication coincided with the first known fermentation of foods and alcohol, inferring that this might have attracted boar. This brings to mind Barua's (2014b) work on 'volatile ecologies' and ways alcohol becomes a 'vital' actant in human-elephant conflict in rural India.

*rotten food, and human faeces...[they] possessed alchemical powers, transforming garbage into [human] food. (p. 40-41)*

Generally, it is accepted that pig-boar domestication occurred around 8-10,000 years ago (Evin et al. 2017) and was multi-sited, occurring independently in China, Anatolia and variously in South-East Asia (Larson et al. 2005). This was a convoluted and long-winded process of co-evolution, involving multiple movements of domesticated pigs through landscapes without pre-existing domesticated animals, and the regular intermingling of wild and domestic animals (Frantz et al. 2016; Larson and Burger 2013). Furthermore, domestication unfolded differently in Europe and Asia, something reflected in the greater genetic diversity of domestic Asian pigs than those in Europe (Frantz et al. 2016). Records suggest Asian pigs were segregated and penned at an earlier stage in their evolution, increasing both genetic diversity and morphological differences (White 2011). On the other hand, husbandry practices in Europe allowed (semi-)domesticated herds to move relatively autonomously through woodland for seasonal forage, whilst co-habiting and interbreeding with wild(er) boar. Indeed, wild and domestic animals in Europe were morphologically similar until around 300 years ago, at which point Chinese domestic pig breeds were imported, leading to enclosed farming practices and segregated populations (White 2011).

Drawing things together, it seems human-pig-boar relations in Europe have historically been marked by shared topologies and almost constant proximity, histories “lived in zones of inescapable overlap” (Van Dooren 2016, p.204). Phylogenetic maps, however, also show numerous gaps, suggesting localised extinctions, most likely from excessive hunting or extermination (Frantz et al. 2016). Relations, therefore, appear complex, continually “unsettled mixture[s]” fluxing through mutualism, commensality and parasitism (Tsing 2012, p. 143). These might be understood as reflecting an awkward, almost ‘monstrous companionship’ between humans, pigs and boar. Critically, these intimate entanglements are not

defined purely by human agency, but by the creative, processual actions and capacities of boar. Unlike many animals who inhabit different habitats and ecological niches to humans, or who might actively avoid their presence, boar appear to have been able to co-habit and adapt to human presence. This generates two significant points. Firstly, that ontological separations between 'wild' boar and 'domesticate' pigs are unstable due to their continual intermingling and are, seemingly, a relatively modern concern (in Europe). Secondly, it also problematises the ways in which humans have progressively enacted (b)ordering practices and territorialised space (see Murdoch 2006), the issues of which are raised subsequently with regards to contemporaneous human-boar relations.

### **2.3.2 Contemporary relations**

This subsection addresses contemporary boar bio-geographies and develops the introduction made in Chapter 1. While the last subsection drew from the genetic and archaeological sciences, here I lean more on work from ecology and conservation biology and, once again, consider the situation at a broad species scale.

As noted previously, boar are classified by the IUCN as "least concern" due to their "wide range, abundance, tolerance to habitat disturbance, and presence in many protected areas" (Oliver and Leus 2008, p. 1). Unlike the wild ancestors of many domesticated species they have neither been pushed to extinction, as with aurochs, nor merely hang on as endangered or vulnerable species, such as mouflon. Boar are present on all continents except Antarctica, a result of their own relational autonomy and their translocation by European colonialists to the Americas, Australasia and globally scattered islands (Melletti and Meijaard 2017). Boar, along with humans, were important co-colonisers. Over the last 50-60 years in their

‘native’ range (See figure 2)<sup>12</sup>, they have also been (re)introduced to places they were temporally extirpated, whether intentionally by hunters, such as in northern Italy (Hearn et al. 2014), or else through accidental escapes and deliberate releases from captivity, including in the UK, Denmark and other localities (Putman et al. 2011; Keuling et al. 2017).

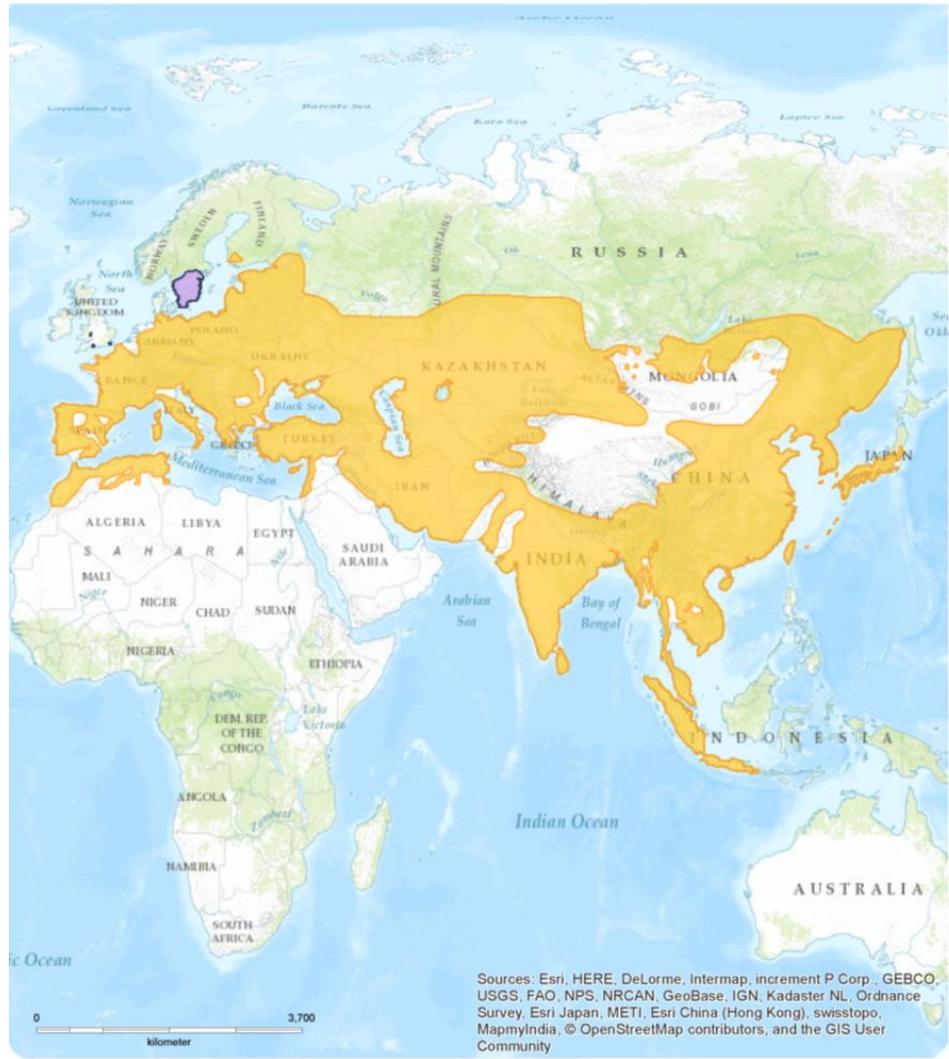


Figure 2- Geographical distribution of boar (yellow= extant presence; purple= (re)introduced presence) (from Oliver and Leus 2008)

<sup>12</sup> The concept of ‘nativeness’ is considered in further in Chapter 3.

As with other species of wildlife (and expanded upon in Chapter 3), boar monitoring and surveying is predominantly data driven and carried out at a population scale (Boonman-Berson et al. 2018). Statistics suggest these and their geographies have expanded significantly over the last fifty years throughout their native and introduced ranges<sup>13</sup>. Massei et al. (2015) suggest this is due to a combination of factors, including species-specific biological factors (very high reproductive output and dispersal potential); lack of large predators; reforestation; deliberate releases for sport hunting; supplementary feeding; habitat alteration due to human activities and mild winters (p. 2). Boar success, it appears, is related to a complex assemblage of factors. Their behavioural ecologies, capacity to live in proximity to humans and ability to adapt to wider environmental changes caused by anthropogenic influences intra-act in ways beneficial to their species scale success.

Firstly, boar are able to inhabit a range of ecological habitats, including semi-arid environments, marshlands, grasslands, as well as temperate forests and tropical rainforests (Oliver and Leus 2008). Unlike many other artiodactyls, they are not ruminants and evolved to become omnivorous foragers, rather than herbivorous specialists (Schley and Roper 2003; Ballari and Barrios-García 2014). By combining browsing and grazing, underground foraging and rooting, and predation, boar are able to move through a range of habitats and take advantage of the presence of a diverse array of lifeforms: seeds, fruits, leaves, stems, grasses, bulbs, tubers, roots, rhizomes, fungi, earthworms, insects, small mammals, amphibians, reptiles, birds eggs, bird chicks; as well as carrion (Massei and Genov 2004; Keuling et al. 2017). The abundance and frequency with which different things appear in their diet depends upon seasonal factors and the ecological assemblages present, though it

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<sup>13</sup> see Keuling et al. (2017) for an extensive summary

appears they generally prefer plant over animal matter (Ballari and Barrios-García 2014).

Critically, boar are also drawn to agricultural spaces and crops which, firstly, provide easily accessible, highly-calorific food sources, particularly in summer-autumn when they are most nutritional and, secondly, offer shelter and cover within human proximity (Keuling et al. 2008a; Morelle and Lejeune 2015; Morelle et al. 2016). Furthermore, changing agricultural practices are believed to have been advantageous to boar, notably, a continent-wide increase and extension of maize farming over the last few decades which grows rapidly and appears desirable to their tastes (Keuling et al. 2017). In addition, the reduction of seasonally fallow field spaces as agriculture has intensified also means crop landscapes provide an almost permanent, easily obtainable source of food. The consequences of boar presence in spaces demarked for agriculture are multiple and a primary driver in social-political tensions and 'conflict' surrounding the presence of and responsibility for managing boar (Frank 2015; Keuling et al. 2017; Storie and Bell 2017). This, primarily, relates to boar foraging, or the 'impacts' of 'damage' (Massei et al. 2011), on crops, however, increasingly, biosecurity concerns are gathering around disease transmission between domestic pigs and boar, notably African Swine Fever (EFSA 2014; More 2018).

The capacity to consume different foods and exploit farming trends couples with another, important biological trait, namely, that female fertility is onset by body weight rather than age (Frauendorf et al. 2016). This means abundant food sources allow juveniles to gain weight more rapidly, ensuring not only their own survival but also earlier sexual maturity. Moreover, it appears boar adapt their reproductivity, according to the seasonal and annual availability of critical pulsed resources such as beech and oak mast. When these are limited, juveniles prioritise their own survival over reproduction, though adults tend to reproduce at similar rates (Bieber and Ruf 2005). Such 'elasticity', in scientific parlance, means boar can benefit from

favourable environmental conditions and adapt when they deplete, leading to fluctuating but persistent, self-sustaining populations. This reflexive relationship with their environment is given extra significance as climate change has intensified, leading to milder winters and damper conditions throughout Europe (Vetter et al. 2015). Increasingly clement weather improves boar health and juvenile survival (and thus reproductivity), while also escalating the frequency of beech and acorn mast years, meaning important food sources fluctuate less<sup>14</sup>.

This regular supply of forest food, vital in autumn-winter, extensive farming and continual cultivation of highly nutritional crops and more benign weather has generated ideal conditions within which boar have flourished at a population scale (Keuling et al. 2017; Melis et al. 2006). However, as noted in Chapter 1 and explored further in Chapter 3, a further alteration to boar environments has given them space to succeed. That is, changing political ecologies and economies have spurred rural depopulation, afforestation and urbanisation in parts of Europe, altering species assemblages, ecosystems and human-nonhuman relations (Beilin et al. 2014). This has given many species space to grow, become 'resurgent' and rewild beyond the constraints of historic human practices (Navarro and Pereira 2012; Helmer et al. 2015). Boar appear to have benefitted from a diminishing in the vigilance with which rural borders were once regulated and cultural practices maintained through hunting, allowing them to exert more agency, co-produce new spaces and alter relations where humans are still physically present (Hearn et al. 2014; Storie and Bell 2017).

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<sup>14</sup> Interestingly, correlations between milder climates and growing boar populations reflect past changes in their range and population, which have similarly fluctuated according to temperature and resultant habitat change (Groenen et al. 2012).



This chapter has introduced some of the conceptual underpinnings of the thesis. Firstly, it showed how relational thinking has helped foreground the agency of nonhumans and the ways in which they and humans are imbricated one another's lives, before considering how human-boar histories reflect such entanglements. Though speaking through an uncomfortably broad continental and species scale, the chapter has shown how boar appear synanthropic rather than anthropobic, leading to a variety of evolving relations with humans, at times companionly, at other times as monstrous. Processual human-bo(a)rderlands are tense and increasingly complex as wider ecological and political changes nurture an environment within which boar are able to flourish. Thinking about this unfolding situation beyond the UK helps foreground the uncertainties of cohabiting with boar elsewhere, and the ways in which they unsettle simplistic spatial, genetic and moral (b)orders.

## (B)ORDERING WILDLIFE II: MANAGING WILDLIFE

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### 3.1 Introduction

Whereas Chapter 2 introduced relational theories to help conceptualise historic and contemporary human-boar relations, this chapter pays attention to the ways in which humans have sought to govern wildlife more broadly and considers how three dominant strategies- orthodox conservation, biosecurity and rewilding- offer contrasting ontologies of wildlife (Adams 2017; Buller 2013b; Lorimer 2015; Lorimer and Driessen 2013). These draw together a range of political techniques, technologies and skillsets that converge and diverge according to context, and are bound up with differing political, economic, legal and moral (b)orders. Whilst orthodox conservation and biosecurity seem to overlap, at times, rather neatly, rewilding on the other hand appears more transgressive. Carried out through a range of practices, we might understand these varying techniques of wildlife governance not as entirely distinct modes of ordering life, but as a multiplicity that co-exist in tension (Hodgetts 2018; Lorimer 2015).



Increasingly, these sets of practices have been considered through various Foucauldian formulations of 'biopower', 'biopolitics' and 'governmentality', concepts that became progressively interrelated in his works (Elden 2007; Rutherford and Rutherford 2013). Though Foucault primarily spoke about humans, increasingly his work has been used to think through power relations between humans and nonhumans (Rabinow and Rose 2006; Biermann and Mansfield 2014; Hodgetts 2018). Foucault suggested pre-modern, western societies were governed primarily through sovereign modes of power, characterised by "the right to decide life and death" or, in other words, the right to take life or let live (Foucault, 1981, cited in Rabinow and Rose 2006, p. 196). However, as societies liberalised and

economies diversified, there was a shift towards 'biopower' which promoted the "power to foster life or disallow it to the point of death" (ibid, p. 196). Foucault understood biopower as primarily exercised through two means; as anatomo-political interventions on individual bodies and bio-political interventions conducted at a collective scale. Whilst some earlier interpretations of Foucault's description of this transition portrayed it as a clean, totalising and linear shift, the reality, Rutherford (2007) suggests, is that these forms of power have always been partial and incomplete. Power is multiple, with sovereign forms persisting alongside modes of biopower. Relatedly, differing governmentalities and governance arrangements are also never completely settled, particularly in neoliberal times, but always in process as they struggle to maintain and attain authority.

Conservation and biosecurity have, historically, been enacted through a range of boundary-making practices and (b)orders that place and space wildlife. Whilst sovereign power, bio-power and biopolitics offer interesting overarching frames through which to situate modes of governance and management, my interest is also in the 'practices' that help make and shape realities, therefore it is useful to lean on literature from STS (Mol 1998; Law 2004). In particular, thinking with Law's (1994) proffering of the various 'modes of ordering' that constitute political techniques and social organisation is a useful way to consider the breadth of practices that make up conservation, biosecurity and rewilding. Though orders might be imposed through broader political structures and philosophies, they are also practised and, Law suggests, gain significance through the material realities of their conduct and the extent to which they cohere with other praxis. The levels of coherence or, perhaps more importantly, noncoherence, between different orders, practices, entities and ontologies, and whether these can be adequately articulated between one another, influences whether they are successful or not (Law et al. 2014; Law 2004). Following on, conservation and biosecurity might be understood as relying upon various modes of (b)ordering that seek to spatially, temporally and ontologically arrange nonhuman life and human-nonhuman relations (Hinchliffe 2007).

From here, this chapter introduces these modes of (b)ordering life and the ways in which their different ontologies and practices complement and contest one another. This is important as these ‘modes of nonhuman biopolitics’ (Lorimer and Driessen 2013) and their associated practices encompass key ways in which wildlife broadly and, more specifically, boar are ‘made present’ politically and ethically (see Hinchliffe and Whatmore 2006).

## **3.2 Fixing through borderlines**

### **3.2.1 Conserving life**

Western, post-enlightenment binary ontologies separating nature and culture, rationality and irrationality, purity and impurity legitimised a human mastery and precedence over the nonhuman world (Latour 1993; Plumwood 1993). This contributed to a bifurcated nature that both facilitated the untrammelled exploitation of natural resources for human utility, and, in the 1800s, influenced a range of antithetical social and romantic iconographies that exulted nonhuman nature as a spectacle of inherent and essential beauty (Ditt and Rafferty 1996; Adams 2003). Pristine nature as a pure and external entity, “the ‘unspoilt’ other” became imagined as wilderness in North America and parts of Europe, whilst in the UK (and other parts of Europe) it was an idyll “embodied in the relics, customs and mystery” of the rural countryside (Macnaghten and Urry 1998). A perception that urban environments and industrialisation were increasingly corrosive, impure and imperialising, was mirrored by sentiments that “pristine, virtuous, wise” natures needed protection from the threat of modernity (Ditt and Rafferty 1996, p. 4; for further discussion on conservation histories, see also Adams 1996, 2003; Macnaghten and Urry 1998).

The ‘orthodox approach’ to conservation (Lorimer 2015) slowly emerged through an admixture of social movements, policy interventions and evolving practices from

the late 19<sup>th</sup> Century and throughout the 20<sup>th</sup> Century as a means of rationally ordering the relationship between society-nature (Sutton 2004). In its current form, conservation might be understood as “complex assemblages of theories, technologies, laws, territories and practices from past eras with different politics and ecologies” (Lorimer, 2012, p. 606). Though speaking generally is risky due to its multiple biopolitics and modes of practice (Hodgetts 2017), broadly speaking orthodox conservation has been applied through a diverse array of (b)ordering and classificatory logics, principal among which has been territorialising spaces into which nature can be fixed, conceptually and practically, and made an object of governance (Hinchliffe 2007; Lorimer 2015; Adams 2017).

The power of conservation practices has been exerted through two kinds of territorial spacings. Firstly, by (b)ordering land- possibly as nature reserves, protected areas, conservation zones- to contribute to a spatial imaginary of where nature is or ought to be. These have been founded on an equilibrium account of ecology, one that “conceives of nature as a homeostatic machine...balanced, and predictable” (Lorimer 2015, p. 78) made of established habitats and communities which can be controlled and stabilised. Hodgetts (2017) describes these reserves as practices of ‘place-making’, ones that Bowker (2005) claims are primarily interested in “render(ing) the present eternal” (p112)<sup>15</sup>, the ‘present’ in most cases (in the UK at least) being a pre-modern notion of nature and landscape which is orderly rather than eventful. Secondly, conservation (b)orders nonhuman bodies and their conditions, setting boundaries about what different species are, and how different organisms and humans are allowed to interact: who can move, kill, transform or care for others (Adams, 2017).

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<sup>15</sup> Hinchliffe (2008) uses and paraphrases this term frequently, and it is from this paper that I take it.

A key political technique that emerged in the late 20<sup>th</sup> Century and complemented the administration and monitoring of landscapes and species was the notion of 'biodiversity'. Centring on Linnaean taxonomy to help classify 'nonhuman difference' at a species scale, it has become the pre-eminent principle through which to perform conservation practice by quantifying and valuing nature through a calculatory means, despite uncertainties over its classificatory techniques and how it should be measured (Takacs 1996; Gaston 1998; Bowker 2000b; Lorimer 2007b). This system emphasises how scientific advancements in molecular knowledges have been used to rank species, communities and populations in relation to genetic heritage and purity. Linnaean taxonomy underpins many global conservation classifications, such as Endangered Species Lists (Braverman 2014b) and UK Biodiversity Action Plans (Lorimer 2015), which serve to order and value species according to a range of logics, including rarity, charisma and cultural significance. Biodiversity as a concept converged with older forms of biogeographical and biopolitical (b)ordering, which included separating species into native and non-native, rare or proliferate, and pure-impure binaries (Head et al 2014; Hinchliffe 2007; Lorimer 2015).

Through their employment of a range of practices, technologies and knowledges, conservation practitioners have been described as "curators of wildlife" (Verma et al 2016, p. 77), implementing a range of bio and anatomo-political techniques- species lists, surveillance of rare species and populations, statistical monitoring- to foster desirable life and make it live (Biermann and Mansfield 2014; Braverman 2014b; Srinivasan 2014; Lorimer 2015). Though some argue conservation is an attempt to establish a utopic "predictive, lawlike knowledge" (Bowker 2000b p. 745) through imperialising, technocratic archives and surveys (see Takacs 1996; Youatt 2008), Chapter 4 considers how monitoring and surveillance in practice are incomplete and messy, unsettling hegemonic, scientific epistemologies that seek to represent nonhuman life (Hinchliffe 2007; Lorimer 2015).

### 3.2.2 Securing life

Chapter 1 briefly introduced biosecurity as ongoing practices of securing life and making it safe (Barker et al. 2013; Bingham et al 2008a). With a focus on unruly matter(s), biopolitical governance regimes and discourse have frequently focused on the protection and health of "indigenous biota, agricultural assemblages and human(s)" (Barker et al. 2013, p. 5). The United Nations Food and Agricultural Organisation (FAO) 'biosecurity toolkit' defines biosecurity as:

*a strategic and integrated approach to analyzing and managing risks to the environment... a holistic concept of direct relevance to the sustainability of agriculture, and wide-ranging aspects of public health and protection of the environment, including biological diversity" (cited by Outhwaite 2013, p. 81).*

Arguably, then, we might understand conservation as entangled with modes of biosecurity that seek to preserve and protect biodiversity from external risks. As noted earlier, within biosecurity literature these risks are frequently disease related, but also include the regulation and control of other forms of life, including plants and animals perceived as biologically and ontologically threatening, including boar.

Like conservation, orthodox biosecurity is a fundamentally territorial practice seeking to make space safe and secure the health of its populations. A long-standing principle has been to order and standardise, or purify, Euclidean space and ensure that its various borders are firm and closed (Enticott 2008b; Hinchliffe and Bingham 2008). Protecting valuable life- whether livestock, crops, endangered species- therefore, involves "attempts to monitor, regulate, and/or halt the movements of various (other) forms of life" (Bingham et al. 2008). Hinchliffe et al (2013a) suggest historic biosecurity practices have been enacted through 'borderlines' which emphasise techniques of bio-exclusion and bio-containment. Borderlines are part of a preventative approach relying on barriers to eliminate, or

at least minimise, the possibilities of contact between desirable and undesirable lives or, in Foucauldian terms, the normal and pathological (Murdoch and Ward 1997). Whereas practices of biodiversity conservation might be understood as 'inclusionary' and creating borders to stabilise life within a place, biosecurity might be seen as 'exclusionary' and creating borders to keep things out.

The borderlines used to arrange and separate life are multiple. For example, these might be physical boundaries that attempt to separate agricultural spaces from the outside (Enticott 2008b); sets of practices that seek to regulate unwanted disease flows between different farms and farm stock (Law 2006); or else fencing to enclose wildlife within protected, conservation areas (Evans and Adams 2016). Separation, therefore, is carried out through material arrangements that might seek to keep certain things 'in' or 'out'. Furthermore, securing life is clearly not only about bordering space to make some lives live, as strategies of biopower infer, but about enacting sovereign power through, in Crowley et al's (2018) terms, various 'modes of killing', one of which is 'culling'. In the UK, culling might be performed to, amongst other examples, control invasive or non-native species, such as grey squirrels or parakeets (Crowley et al. 2018; 2019); prevent the spread of contagious disease between infected domesticated animals, such as sheep with Foot and Mouth (Law 2006; Law and Mol 2008); limit interspecies contact between wild and domestic animals, such as badgers and cattle (Maye et al. 2014); or else control overabundant ungulates threatening forestry (Dandy et al. 2012).

Another key aspect of these biosecurity approaches, once again shared with orthodox conservation, is the importance of accumulated statistics and maps as a way of informing risk and the spatial-temporalities of likely events (Hinchliffe et al. 2013). Risk, then, is understood as manageable based on a logic of calculation that gives a sense of predictability to territory and its populations, making it appear knowable, a critical technique of biopolitical governance (Murdoch 2006b). This is grounded in a belief that futures can be secured through historical records, and that

“archival knowledge of the timing and location of outbreaks...[can help] design effective interventions” (Lakoff 2008, p. 40). Such a calculatory politics helps ramify borders that not only say what and where is secure or insecure, but also quantify security and potential insecurity.

### **3.2.3 Organising space and life**

We can understand these spatial arrangements and (b)orders as techniques of territorialisation that fit with broader political strategies of calculating, monitoring and regulating public and private space (Murdoch 2006b; Murdoch and Ward 1997). Territory is an interest of governance, “a rendering of the emergent concept of ‘space’ as a political category: owned, distributed, mapped, calculated, bordered and controlled” (Elden 2010, p. 578). Territories are performative, shaped by and shaping continual transformations in regimes of governance. However, they work and manifest in different ways. One way in which we might understand the organisation of these previously described forms of conservation, security and their spatial binding of life is through what Mol and Law (1994) refer to as ‘regions’, where “objects are clustered together and boundaries are drawn around each cluster” (p. 643). Organising space regionally requires a series of political, ethical and practical decisions to be made about where boundaries lie, and what is allowed or desired to be inside and out. Regions make “space (is) exclusive. Neat divisions, no overlap. Here or there, each place is located at one side of a boundary. It is thus that an ‘inside’ or and an ‘outside’ are created. What is similar is close. What is different is elsewhere” (p. 647). Regional spaces, therefore, organise and bind life and its processes topographically, “suppress[ing] difference and encourag[ing] uniform treatment of the objects within them” (Bear and Eden 2008, p. 490).

Importantly, whilst regionalised conservation and biosecurity regimes focus on (b)ordering Euclidian spaces, they also govern through ‘network’ topologies. These are gatherings of heterogenous entities- machines, datasets, places, people- which have well defined relations and connect different regions. Network spaces are less

about topographies and proximate relations, more “the identity of semiotic patterns[s]” (Mol and Law 1994, p. 649). Networks can cross boundaries, connecting and generating regions with “*similar set[s] of elements and similar relations between them*” (ibid, p. 649, emphasis in original), giving them a sense of closeness and ‘folding’ regional surfaces. Regions become connected through these networks and modes of (b)ordering- biodiversity, species, disease, ecological condition- which also enable knowledges of their constituents.

A similar, related way of understanding this kind of spatial organisation, is through Deleuze and Guattari's (2004) concept of ‘striated’ space and territorialisation. As with regionalisation, this is space enacted through the assignment of things to locations and co-ordinates, “an overcoding system...according to an abstract diagram” (Bear 2013, p. 25, citing Doel 1996). A classic template of “[M]anagement-by-striation”, in Bear’s words, is “where boundaries are drawn on maps to determine where certain activities may or may not take place” (p. 35). But both regionalisation and striation are more diverse than this and occur in multiple ways. Beyond two-dimensional spatial topographies and (b)orders, Bear explains, they also occur through the classifications of different animals or the modes of ordering their presence. They are, then, about territorialising, conserving and policing. But how successful are these structured ways of organising and spatialising life, and to what extent have these classifications performed as wished?

### **3.3 Fluidity and borderlands**

#### **3.3.1 Changing conservation borders**

These previously described strategies are part of what has been termed a ‘defensive’ (Taylor 2013) ‘preservationist’ (Adams 2003) or ‘compositionalist’ (Lorimer 2015; Jepson 2016) regime of conservation. These have, in specific cases, been successful and legal frameworks and practical interventions have protected a range of endangered species and habitats. However, though the number of global

and localised protected species lists and biodiversity inventories have increased (Braverman 2014b), alongside an expansion in the number and coverage of protected areas (Juffe-Bignoli et al. 2014), these long-standing regulatory mechanisms of conservation appear to have struggled to fulfil their goals. Important habitats have continued to degrade or disappear, species gone extinct and biodiversity diminished (Dirzo et al. 2014; Seddon et al. 2014; Svenning et al. 2016). As importantly, the ethico-political applications of these have appeared increasingly at odds with evolving understandings of justice. Not only have they been founded on debatable spatial and ontological divisions, but their practices have been seen as excluding and imperialising vulnerable voices and presences, whether human or nonhuman (Adams. 2016; Büscher et al. 2012).

These developments have highlighted the precarity caused by isolating protected species in preserved spaces, or else prioritising certain lives over others, within the potentially deleterious, multifarious effects of the Anthropocene. Regions of conservation interest, whether protected areas or individual animal bodies, have been constricted by intensifying agricultural landscapes, exploitation of natural resources, and the strict, sovereign policing of lively security risks that transgress boundaries (Adams et al. 2014; Jepson 2016; Taylor 2013). Orthodox conservation and its prescriptive approach to calculating, assessing and (b)ordering the places and lives of ecological compositions appear somewhat retrograde (Jepson. 2015), and the policing of boundaries and transgressive species excessive. At a time when Anthropocene threats are multiple, heterogenous and virtual, merely being reactive to a range of actualised external threats has not been entirely sufficient for conservation to succeed (Lorimer 2015).

As the problematic nature of conservation borderlines have grown ever apparent over recent decades, developing knowledges have also informed new ecologies underlining the importance of not just spatial areas and size, but also ecological and structural connectivities and edge effects (Crooks and Sanjayan 2006; Hodgson et

al. 2011; Lindenmayer et al. 2008; Manning et al. 2009). These have emphasised and provided evidence for landscape-scale conservation approaches and ecological restoration schemes that promote ecosystems and connectedness, as much if not more than the intrinsic values of particular species and spaces (Bullock et al. 2011; Hobbs et al. 2009; Jordan and Lubick 2011; Norris 2012). Critically, from the 1980s, UK and European policy shifted strategies and initiated changes to partially re-couple nature-cultures (Adams et al. 2014). These evolving practices and knowledges are not merely theoretical, but contribute to an ontological political move that “challenges the modern science–politics settlement, where natural science speaks for a stable, objective Nature” (Lorimer 2012, p. 593).

Throughout Europe, conservation policy has increasingly promoted a multi-scalar strategy that still values (b)ordered spaces and subjects, but is opening to the broader sensibilities of ecological and landscape health<sup>16</sup>. Zimmerer (2000) talks of “the expansive new geographies...(of a) conservation boom” (p. 356) in the 90s, aspects of which promoted Agri-environment schemes (AES) within farming landscapes and habitat (re)creation, occasionally enforced upon multiple landowners, to spread environmentally beneficial management techniques more broadly (Adams et al. 2014; Merckx and Pereira 2015). Conservation practices and their biogeographies thus expanded and diversified (Ladle and Whittaker 2011), initiating practices and policies that might allow for increased movement and fluidity, as well as fluxing and non-equilibrium more-than-human relations that have been hitherto constricted by the (b)ordering of nature (Manning et al. 2009;

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<sup>16</sup> In the UK, such trends are reflected in various consultation reports and policy papers, such as *Making Space for Nature: a review of England’s wildlife sites* (Lawton et al, 2010); *The Natural Choice: securing the value of nature* (DEFRA, 2011b); *Biodiversity 2020: a strategy for England’s wildlife and ecosystem services* (DEFRA. 2011a); as well as the Millennium Ecosystems Assessment (2005).

Zimmerer 2000). To adapt appropriately, therefore, conservation and wildlife governance has been undergoing a continual re-territorialisation (Adams et al. 2014). And yet, although there have been isolated successes, the broader achievements of AES schemes and other landscape strategies have appeared ambiguous at best (Kleijn et al. 2006; Kleijn and Sutherland 2003), enacted as they have through a persistently compositionalist approach to valuing, calculating and monitoring wildlife within the restrictions of a privatised and fragmented modern landscape replete with (b)orders and boundaries (Lorimer 2015).

### **3.3.2 Changing security borders**

As much as strategies and knowledges of conservation have evolved, so too have those of biosecurity. Orthodox approaches relying on strict bordering principles to prevent and minimise the threats of risky life have proven only partially effective, as shown by the number of disease outbreaks in agriculture and the growing mobilisations of wild species to new locations (Barker et al. 2013; Braun 2013). Spatial barriers appear “precarious, ambivalent, and contingent” (Enticott 2008b) in the midst of multiple and complex flows of life through heterogenous spaces. Attempts to purify space might, for example, create sinks for further forms of pathogenic life (Law 2006) or else initiate perturbation effects that further mobilise the risky lives subjected to control (Enticott 2008a). In particular, whereas orthodox modes of management enacted through borderlines and sovereign control have been performed in relation to visible and immediately recognisable threats, contemporary biosecurity regimes are increasingly entangled with the multi-scalar uncertainties and complexities of an increasingly interconnected and mobilized world (Barker 2015; Hinchliffe and Lavau 2013). Biosecurity, in Braun's (2007) words, is thus an increasingly “global project...reconfiguring...relations between people, and between people and (their) animals...wed[ding] biopolitics with geopolitics” (p. 23).

A key aspect of evolving biosecurity practices and regimes has been the need to negotiate a balance between acknowledging the relational nature of social organisation and, indeed, life itself, whilst minimising risk. Healthy ecologies and lives, whether wild or domesticate, need to be connected to others, whilst contemporary (neo)liberal economies are based on flows of commodities and trade. In Foucault's (2007) terms, biopolitical modes of governance have, therefore, become “a matter of organising circulation, eliminating its dangerous elements, making a division between good and bad circulation, and maximising the good circulation by diminishing the bad” (p. 18). In this context, biosecurity practices need to simultaneously facilitate and regulate these movements. However, separating desirable movements and halting risky ones, and determining how much movement is safe, is epistemologically challenging (Barker 2015). More than just separating good and bad, or the normal and pathological- two over-simplistic binaries-, biosecurity practices are increasingly concerned with tackling the complex entanglements of unruly biologies and ecologies. In other words, they are frequently about “securing life against the *proliferation of life...[of] too much life...[the] fear that continually incubating within life are threats to life. As such, life must be secured against life.*” (Braun 2013 p.48, emphasis in original).

Surveillance and monitoring are integral aspects of security practices, and aim to “reduce the invisible presence of a virus or organism...the period of ‘silent spread’ prior to detection” (Barker 2015, p. 360). Surveillance technologies and techniques, therefore, need to be aware of life’s fluidity and immanence, not just the interactions and external associations between things, but also their intra-actions and internal associations (Barker 2015; Hinchliffe et al. 2016). Biothreats are multiple and might be visible, stable and conspicuous, such as large charismatic animals; microbial, mutable and discreet, such as viruses; or else both. The growing awareness of these multi-scalar associations, compositions and assemblages has both aided, and been aided by, the ‘molecularization of life’ (Braun 2007). By reorganizing the concerns of biosecurity and the types of surveillance it seeks to

enact, it increasingly addresses both the permeability of physical boundaries within landscapes, as well as individual bodies.

The multiplicity of bio-threats has significant implications for understandings of space. Whereas some might be framed through their topographies and, thus, become a concern due to their spatial 'extension', others are topological matters that emerge through spatial 'intension' (Hinchliffe et al. 2013). That is, their threat comes from the intensification of the human-nonhuman entanglements, and the heterogenous, more-than-human environments within which they are situated. Therefore, whereas the former focuses on where threats might be, the latter focuses on density of relations within an assemblage from which threats might emerge.

The possibility of risks emerging unexpectedly from assemblages, as opposed to always being extant, transforms contemporary security ontologies. Rather than focusing purely on 'actual' and 'present' threats as with orthodox approaches, these are increasingly mixed with the 'virtual' and 'potentially present' (Braun 2013; Hinchliffe et al. 2016). There is, therefore, a concern with multiple present-future timespaces as the possibility of nascent and emergent threats and future uncertainties increasingly spur anticipatory modes of governance relying on practices of 'pre-emption' and 'preparedness' (Anderson 2010; Hinchliffe and Bingham 2008). Braun (2013), following the work of Massumi (2009), describes how contemporary security regimes frame the world as replete with "incipient events...[which] incubate in the present as a future catastrophe", thus collapsing actual and virtual worlds together and making them "inseparable" (ibid, p. 51). Through preparedness, governing regimes plan for what comes after inevitable events by producing logistical protocols and practices that order lives, things and information that operate to maintain "the biosocial networks that allow life to flourish in the face of the unexpected threats that the same, or similar, networks call forth" (ibid p. 53). On the other hand, pre-emptive approaches exert

power by preventing events from occurring and intervening in the “*conditions of emergence*”, thereby producing “alternative futures” (ibid p. 53, emphasis in original). This, Braun suggests, enacts a form of “ontopower” (p. 52) whereby interventions seek to ensure certain futures and realities over others. Summarily, it seems strategies of governance do not merely act and intervene in what ‘is’ a threat or predict what ‘will’ happen, but also what ‘could’ happen.

Importantly, shifts in the spatial-temporalities of biosecurity practices are partial, reflecting Foucault’s description of the move from sovereign to biopower. Along with theoretical changes, their practical implementation is embedded with tensions. Notably, to maximise control, effective practices ought be flexible enough to adapt to biological indeterminacy and the uncertainty of assemblages, whilst be tight enough to enact security (Bingham et al. 2008b; Hinchliffe et al 2013b).

According to Hinchliffe and Bingham (2008), “the partialities of control systems...reproduce insecurities at the very same time they offer their solution (p. 1548)”. Political techniques- technologies, everyday practices, policies- bound up in security regimes need to be pliable to reflect the complex entanglements and connectedness of the contemporary world. Success, in other words, hinges on flexibility and adaption to the world within which they are situated.

Rather than smoothly functioning processes, biosecurity practices are always diverse, heterogenous and contingent gatherings of practices and actants. Whilst diverse knowledge practices and ontologies are sometimes successfully assembled together to aid security, as in an example of avian flu (Hinchliffe and Lavau 2013), frequently practices conducted in the open are subject to a range of unexpected, place-specific interactions and interferences that challenge the objectives of regulation (Hinchliffe and Bingham 2008). Official biosecurity protocols and knowledges can appear ‘distant’ and rely on broad, population-scale knowledges that run contrary to the more ‘proximate’, experiential knowledges held by actors expected to adhere to prescribed management guidelines, such as farmers involved

in bovine tuberculosis (bTB) controversies (Enticott 2008a). Or else, biosecurity strategists struggle to understand the culturally-rooted belief systems that appear to have contradictory attitudes the spaces of biosecurity prescriptions and negotiations surrounding risky wildlife, such as badgers (Enticott 2008b). Various 'modes of securing', it seems, are often embedded with or reliant upon an openness to confusion, concession, adaptation and accommodation (Hinchliffe and Bingham 2009).

### **3.3.3 Disorganising space and life**

Section 3.2 considered how orthodox conservation and preventative security approaches have been organised through (b)orders and classifications that regionalise and striate space. However, applying a fixed, preventative and topographic framework to manage nonhuman life has proven inadequate in protecting both the interests of humans and vulnerable wild lives. This appears to be because the relations between species and their environments, the ways in which they move and are both affected by and affect others is far more complex than such regimes might have allowed. Realities are messier, more contingent and diverse than arrangements simplifying space and life can allow. Whereas orthodox strategies have been defined by (b)orders that restrict, suppress and presume stability, practices approaches to wildlife management are evolving and reconsidering spatial relations.

Whereas regions and networks have definitive connections and create boundaries to stabilise and govern spaces by differentiating between insides and outsides, ecologies transform and shift. In Mol and Law's (1994) terminology, they can be understood as 'fluid', generative of "*invariant transformation[s]*", comprising of "mixtures and gradients", inside of which "everything informs everything else [and] the world doesn't collapse if some things suddenly fail to appear" (p. 658-659, emphasis in original). Within fluid spaces, Mol and Law explain, boundaries are not necessarily clear, their objects and subjects not always known or judiciously defined

and, importantly, the distinctions between the normal and pathological is not absolute. Rather, this might be understood through gradients, rather than distinct thresholds or (b)orders. Life overflows its surroundings and the ways in which regions try to organise it. Whereas both regions and networks need to flatten difference to standardise space, they behave in unpredictable ways that make fixed and connected networks unstable or redundant. Identities, similarities and differences are blurred. Whereas regions create boundaries that gather known things together and the objects of networks are reliant on one another to make connections, fluids have “no ‘obligatory point of passage’; no place past which everything else has to file; no panopticon; no centre of translation; which means that every individual element may be superfluous” (p. 661, emphasis in original). Fluid mixtures of things, then, are dynamic and relatively instable.

The struggles of orthodox, bordering approaches to conservation and biosecurity are in part due to the fluidities of bodies, lives, spaces and their relations. Regions and networks might appear too rigid and reliant on connections and similarities, whereas life flows. In Ingold's (2008) words, the world more broadly should be understood as a fluid space or a meshwork, “a field not of connectable points but of interwoven lines...[a] zone of admixture where the substances of the earth mingle with the medium [of] this line...each such line, however, is but one strand in a tissue of lines that together constitute the texture of the land” (p. 10). Human and nonhuman life and the environments or landscapes they inhabit are fluid and in relation, both inter/intra-acting. As opposed to network thinking and hybridity which suggest pre-existing entities coming together, meshworks and fluid spaces highlight entanglements of things which are not distinct but emerge from their multiple and complex intra/inter-actions.

Importantly, Mol and Law (1994) emphasise that different topologies of space co-exist and interact as a multiplicity rather than through a singular or uni-form. This might be within a set of knowledge practices, or else where modes of ordering,

perhaps exerted through regions or networks, encounter fluid realities (Bear and Eden 2008). This is likewise the case with 'striated' and 'smooth' space which might simultaneously co-occur with varying degrees of tension (Bear 2013). Whereas striated space is about territorialising, organising bound entities, coordinating points and excluding, smooth space emphasises lines of life, movements and their trajectories. It is, therefore, dynamic and potentially deterritorialising, an immanent space of possibility. Rather than being rigidly dualistic, these two spatial forms mix and are "captured in, and co-produced by, assemblage" (p. 25). Assemblages, then, are akin to collectives of regional, network and fluid space, gatherings of heterogenous entities that fold space and time, but are replete with tensions as various actants cohere and disperse, territorialise and deterritorialise, and permanently flux.

### **3.4 Rewilding**

From developing ecological knowledges and a broader confluence between science, practice and society (Jepson 2016), rewilding has emerged as a new ontology of wildlife conservation and human-nonhuman relations (Lorimer 2015). As shown in Figure 3, rewilding as a practice exists as a multiple, enacted differently according to biogeographical and cultural contexts (Jørgensen 2015; see also Gammon 2018; Lorimer et al. 2015). Such diversity has been a source of contention, as earlier noted in Chapter 1, with some critics uncertain over whether it, firstly, offers a set of techniques that cohere and coalesce into a distinguishable discourse (Jørgensen 2015) and, secondly, whether it is distinct from long-standing techniques of ecological restoration and not just an undesirable, terminological distraction from incremental advances in conservation (Hayward et al. 2019). On the other hand, the heterogenous nature of rewilding practices is argued to be a reflection of the complex and contingent social-ecological assemblages within which nonhuman life is present and wildlife conservation performed (Lorimer 2015; Prior and Brady 2017; Gammon 2018).

REWILDING DEFINITION	REFERENCE TIME	GEOGRAPHY
Cores, corridors, carnivores	Up to 4000 BP, but most are within last 200yrs	North America
Pleistocene Rewilding	13000 BP	North America
Island taxon replacement	16-17 <sup>th</sup> Century, depending on island	Islands
Landscape through species reintroduction	Before species extirpation	Europe
Productive land abandonment	Up to Neolithic c.6000 BP	Europe
Releasing captive-bred species to wild	When captive population created	any

*Figure 3- From Jorgensen (2015)*

This multiplicity and the key points of divergence are summarised in Figure 3. Firstly, rewilding as a variant of orthodox conservation evolved in North America with a conceptual emphasis on protected ‘core’ areas, ‘corridor’ connectivity and the (re)introduction of once persecuted, locally extirpated carnivores (Soule and Noss 1998). Conceived at a large scale, this was bound up with culturally situated, North American ideals of restoring a ‘wilderness’ that existed prior to the destructive impacts of European settlers on nonhuman nature (Jorgensen, 2015). In Europe, on the other hand, species (re)introductions have been more diverse and covered a range of extinct and locally extirpated taxa, notably herbivorous mammals, seen as important to pre-agricultural landscapes dominated by mosaics of wood pasture and forest (Vera 2000). Furthermore, as Figure 3 outlines, these are underpinned by different temporal-spatial scales and conceptions of ideal human-nonhuman interactions. For example, at one extreme are provocative Pleistocene proposals referencing ecologies prior to Neolithic settlement and domestication; whilst at the other are projects (re)introducing species locally extirpated during 20<sup>th</sup> Century modernity (Jorgensen, 2015; Lorimer et al, 2015; Pettoirelli et al, 2019).

However divergently conceived, different ontologies of rewilding commonly value (re)introductions for facilitating and re-initiating some of the complex ecological interactions and trophic cascades critical to healthy and diverse ecosystems increasingly diminished during the Anthropocene (Lorimer 2015; Svenning et al. 2016). Amongst other benefits, large carnivores can control overly abundant ungulates; increased carrion can broaden food webs; increased faeces and bones spur symbiotic, parasitic and commensal invertebrate webs; reintroduced herbivorous species can help increase diversity through patchy grazing, tree-felling and soil disturbance (Sandom et al. 2012); while broader biogeochemical cycling and even climatic changes may occur (Svenning et al. 2016). The ecological arguments for assisting multi-scalar, multi-temporal trophic cascades are numerous and bring the biopolitics of rewilding close to those of biosecurity, framed as a partial solution to the precarity of the Anthropocene and social-ecological futures. From orthodox conservation to rewilding:

*[T]he function of protection shifts as natural and semi-natural spaces are redefined. No longer [as] refuges from change, but rather instruments in the management of change and security. (Buller 2013b p. 184)*

Alongside ecological functioning, another key feature of rewilding praxis is an emphasis on nonhuman autonomy (Arts et al. 2016; Drenthen 2016; Prior and Ward 2016; DeSilvey and Bartolini 2018; Ward 2019). This might be through the relational agencies of individuals and wild species, or else through a desire “to reduce the need for perpetual anthropogenic intervention, resulting in a naturally regulated, ecologically functioning and wilder landscape” (Sandom et al. 2013 p. 433). Similarly, Svenning et al. (2016) emphasise the restoration of natural processes and promotion of ecosystems “that maintain biodiversity with little or no need for ongoing human management” (p. 1). This, it is argued, is key to distinguishing rewilding from other forms of ecological restoration, where projects allowing for more fluid ecologies are premised on a need for continued, long-term intervention.

The promotion of non-intervention and autonomy, however, has proved contentious and they have become bound up in ethical debates surrounding 'wildness' and modernist imaginaries of 'wilderness' (Arts et al. 2016; Bauer et al. 2009; Jørgensen 2015). This, critics argue, problematises rewilding for dissociating humans from nonhuman nature and perpetuating the belief that an intrinsic, wild Other persists where and when humans are absent. Though support for such critique might be found in some models of North American rewilding, as highlighted as highlighted by Jørgensen's (2015) typology in Figure 3, in Europe such conflation of 'wilderness' with 'wildness' appears erroneous (Prior and Ward 2016; Ward 2019). Rather than reflecting a desire to erase humans from an essential wild, non-intervention infers that space and time is given for nonhuman relations and processes to flourish without perpetual human control. Furthermore, rather than pure categories, wildness and autonomy are framed as relational and exerted to differing degrees according to specific circumstances (DeSilvey and Bartolini 2018; Vannini and Vannini 2019). This, therefore, offers a distinct ontology to orthodox conservation which, according to Bowker (2000), portrays "nature as essentially only possible through human mediation" (p. 644). On the contrary, rewilding is framed as possible through multiple scales, intensities and vicinities of human involvement (Prior and Brady 2017). It focuses, therefore, on the multifarious ways in which humans are part of vital and recalcitrant naturecultures, rather than aside a singular, separate 'natural' entity (Lorimer and Driessen 2016).

A final aspect of rewilding to consider is its potential shifting of conservation temporalities and timescales of nonhuman belonging. Closely related to debates over wilderness and human absence, critics suggest it proposes a 'return' to something that has been lost, whether past habitats or particular modes of human-nonhuman relations (Jørgensen 2015; Hayward et al. 2019). This is rooted in a nostalgic and historic gaze, a view drawn from the evocative and romantic literature of enthusiastic advocates (see Monbiot 2014) and more provocative proposals for de-extinction (Adams 2016; Donlan 2014; Donlan et al. 2006). Indeed,

this is often the case in ecological restoration projects which outwardly seek to recreate past historic states. Relatedly, Lorimer and Driessen (2016) suggest rewilding can be driven by enchantment, myth, and the possibility of encounters to reconnect people with wild(er) landscapes. However, using an historic lens to guide human-nonhuman relations would appear more complex than a naïve nostalgia. Though many European rewilding practices seek to look beyond the pre-modern agricultural landscape used as a baseline by orthodox conservation, as highlighted in Figure 3, this ought not be confused with mimicry (Lorimer and Driessen 2016; Prior and Ward 2016). Rather, rewilding is described as future orientated, with the importance of “historical authenticity” outweighed by “desired future wild qualities” (Prior and Brady 2017 p. 10), or else used to help “anticipate particular futures” (Lorimer and Driessen 2016, p. 3). By engaging with multiple past temporalities, it probes the possibility of “divergent future ecologies” (J Lorimer 2015, p. 181).



Critically, while much academic focused has been on formalised practices, as Chapter 1 outlined rewilding is thoroughly entangled within broader political ecologies and changing global economies. Throughout much of rural Europe over the last half-century anthropogenic control and interventions in marginal spaces have decreased. Low-intensive agricultural practices have decreased as productivity has increased in intensive landscapes, leading to land ‘abandonment’ (by humans) and rural depopulation (Navarro and Pereira 2015). Once productive agricultural land has transformed and been recolonised by wild fauna and flora, facilitating opportunities for policy-makers and practitioners to oversee the “passive management of ecological succession by reducing human control of landscapes (Navarro and Pereira 2012, p. 10).

Under such circumstances, rewilding is less about instigating and curating wildness than following the emergent and spontaneous happenings of wild lives themselves (Prior and Brady 2017; Buller 2008; Drenthen 2015). These

shifting political ecologies and social-cultural changes have allowed certain taxa and species to flourish, including resurgent large carnivores (Boitani and Linnell 2015) and abundant ungulates, like boar (Hearn et al. 2014). Frequently, 'passive' rewilding is discussed through the context of remote and large-scale de-domesticating rural landscapes. Distance, as commented earlier, need not be a precursor for wildness. Rather, events of what Tsing (2017) refers to as "auto-rewilding" (p. 6) occur in and can transform places of human disturbance, including "non-rationalized edge spaces" (ibid, p. 9), post-agricultural and post-disaster landscapes, and, indeed, urban developments. Through the affective interactions, agencies and socialities of "auto-rewilders", "feral landscapes" (ibid, p. 9) can unravel away from or beyond the control of humans. The focus of auto-rewilding, for Tsing, is less the opportunities for conservation practice and stewardship, but more the ethical foregrounding of nonhuman agency and multispecies entanglements within relational space, particularly those ignored by orthodox conservation or commonly incorporated into the biosecurity regimes.

### **3.5 Valuing and belonging**

Rewilding and (re)introductions, whether intentional or otherwise, potentially reconfigure understandings of naturalness, biodiversity and biosecurity. This subsection considers three ways in which nonhuman life has frequently been (b)ordered and classified according to intrinsic value, indigeneity and wildness, and the shifting ecological politics around these classifications and categories (Crowley et al. 2017; Lavau 2011). These have produced various boundaries and logics that police and regulate difference and sought to minimise risk, ones that might be unsettled by the vitalist potential of rewilding ontologies.

#### **3.5.1 Intrinsic and relational value**

Earlier sections have highlighted how orthodox conservation has been practiced through the logics of biodiversity which 'cuts up' the nonhuman world into particular 'ontological units' (Braverman 2014a; Lorimer 2015). This classifies them

hierarchically, a biopolitical endeavour based on scientific logic systems and knowledge practices (Bowker 2005; Braverman 2014b). Value is found in the diversity of species that make up various compositions of life, according to long-standing conceptions of static ecological communities, assemblages and habitats. (B)ordered thus, Nature appears 'pre-constituted', rather than emergent, with conservation practices shaped as consequences of what already 'is', as opposed to relational and culturally situated modes of governance (Hinchliffe and Whatmore 2006). Such thinking is grounded in an ethics promoting the intrinsic value of some species, often elevating rarity and distinct ecological compositions as points to be protected, a paradox that necessitates prior decline and loss (Braverman 2015; Jepson 2016). Value, therefore, is found in making distinctions between different forms of life, and defending these through bio- and thanato-political interventions (Biermann and Mansfield 2014).

Rewilding ontologies, on the other hand, ask questions about the fundamental importance of taxonomic distinction and composition as a way of organising ecological health. Though certainly not abandoning threatened and rare life, value is attributed and assessed more through its ecological functioning, affects and relations with other species and processes (Lorimer and Driessen 2016; Sandom et al. 2013; Svenning et al. 2016). (Re)introducing and translocating species under the premise of rewilding is primarily undertaken with the objective of altering broader, ecological interactions, as much as it might be for the intrinsic value of species themselves. In Lorimer's (2016) words, "(L)ocal extinction matters less than systematic dysfunction" (p. 47). Rewilding, therefore, places an elevated value upon 'keystone' species, a label applied to life that shapes and influences ecologies and ecosystems in excess of their biological quantity and proximate affect (Simberloff 1998). Keystone species, often seen as 'ecological engineers', cross taxa and might include ungulates, carnivores, crustaceans and molluscs. In Europe, rewilding projects have introduced species such as bison, beavers, de-domesticated Heck

cattle, de-domesticated horses (Lorimer et al. 2015) whilst in the UK, lynx, wolves and boar are amongst those proposed as part of a wild(er) future (Monbiot 2014)<sup>17</sup>.

However, this appears to raise several problems. Firstly, orthodox conservation has been critiqued for promoting a speciesism based on rarity, charisma and a range of other spatial and moral orders, in contrast to rewilding which initially appears to offer a broader ecological perspective (Lorimer 2015). However, this raises concerns that charismatic ‘keystone’ species might become prioritised, whether intentionally or otherwise, over others (Soule and Noss 1998). Indeed, whilst a system valuing wider processes might allow many species and ecosystems to flourish, others could suffer as ecological relations shift (Navarro and Pereira, 2012). This, it would seem, brings a certain risk and insecurity. For example, more specialist species that flourish in highly biodiverse, low-intensity farmed landscapes might decline as changing management benefits colonising generalists (Merckx and Pereira 2015; Navarro and Pereira 2012). Furthermore, keystone species might only be beneficial at particular spatial-temporal coordinates of certain ecological assemblages, a subtlety often overlooked by (re)introduction advocates (Mills et al. 1993). However, it is also argued that when considered at large, landscape scales, rewilding may in fact display higher biodiversity than in individual subsystems (Carver 2007; Merckx and Pereira 2014). Understanding value through such categories is, therefore, an ethical matter that raises questions about how and for which species humans ought care for if there is what conservationists might term a ‘trade-off’ (Dempsey 2015). Furthermore, it raises questions about how we might understand and value the spatial-temporal scales of more-than-human interactions and processes.

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<sup>17</sup> See also [rewildingbritain.org.uk](http://rewildingbritain.org.uk) for a list of possible species (re)introductions in the UK.

This is also a policy concern. Orthodox conservation is primarily centred on an “orderly biogeography” and monitored through a systematic “audit culture” of (inter)national biodiversity targets and prescribed visions relating to individual species and habitats (Jepson 2016 p. 12). This synthesises with a range of monitoring and surveillance techniques that function to gather data in ways that correlate with an epistemology based on affirming presence, absence and composition (Bowker 2000b; Hinchliffe 2007). An ontological shift towards a stochastic, uncertain and fluid wildlife confronts policies founded on facts, certainties and quantifiable data (Bowker 2000b). Minimising intervention and emphasising unfolding and emergent processes, therefore, becomes problematic for longstanding regulatory and governance regimes administered at both local and international scales. Indeed, the frequently referenced rewilding project at Oostervaarderplaasen (OVP) in the Netherlands encounters tensions between its flexible, processual management strategy and external biodiversity targets, alongside several other legislative friction relating to welfare and biosecurity policy (Lorimer 2016b). In practice, rather than being fatally incoherent, managers have sought to adapt to the “ascendant preoccupation...with the diversity and quantity of system forms to create space for systemic properties- like resilience, abundance and connectivity” (ibid, p. 48). Therefore, it is proposed one way of dealing with the uncertainty of open-ended trophic cascades and emergent ecological assemblages, is to think of keystone species as ‘hypotheses’ (Soule and Noss 1998) and rewilding as multi-scalar and multi-temporal ‘wild experiments’ (Lorimer and Driessen 2014).

### **3.5.2 Native, non-native and invasiveness**

Various subsections have reiterated how animals have been simplified into classifications which frame belonging through a range of culturally situated practices and rely on spatial, moral and biological logics (Head et al. 2014). Key amongst these has been the labelling of species through a ‘native’ and ‘non-native’/‘alien’ species binary reliant on historic biogeographic markers to

distinguish between spatial normality and abnormality. Native species might be described as those which “have evolved in a given area or that arrived there by natural means (through range expansion ), without the intentional or accidental intervention of humans from an area where they are native” (Richardson et al. 2011, p. 416), inferring that humans are ‘unnatural’ and separate to nature (Smout 2003; Warren 2007). To bring clarity to the vagueness of such definitions, practitioners and policymakers identify “temporal thresholds” within particular spatial boundaries (Head and Muir 2004, p. 202). For example, in the UK, biotic nativeness is frequently related to the retreat of the pre-Holocene ice-age, whilst in Australia it is seen as the arrival of British colonisers in 1770 or 1788 (Head 2012). Such a logic relies on the regionalisation, or striation, of both space and time to make sense of what life is expected to be where. Nativeness as naturalness is, therefore, an important aspect of conservationist culture (Lavau 2011).

In contrast, non-native or alien species have been described as “[T]hose whose presence in a region is attributable to human actions that enabled them to overcome fundamental biogeographical barriers”(Richardson et al. 2011, p. 415). However, the significance of non-nativeness is often closely related to discourses around another category, that of ‘invasive’ species. Whereas (non-)nativeness relates to the spatial-temporal (b)ordering of ecological assemblages, invasiveness relates more to the affective behaviours of non-native species, and their potential to:

*sustain self-replacing population over several life cycles, produce reproductive offspring, often in very large numbers at considerable distances from the parent and/or site of introduction, and have potential to spread over long distances (ibid p. 415).*

A growing literature has highlighted the continuing bio-threat of invasive, non-native species and their effects on ecological, agricultural, economic security (Pimentel et al. 2001; Pimentel et al. 2005; Simberloff 2013a). This mode of sorting has been important to conservation and biosecurity practices which have enacted

various borderline practices to prevent the introduction pathways for diseases, viruses, animals and plants believed to threaten the health of domestic and wild fauna and flora (Outhwaite 2013).

Debates over the relevance of nativeness to ecological health have increased as various nonhuman lives have (been) mobilised and firmly established in locations incongruous to their orthodox placings (Simberloff 2015). For many conservationists, adhering to and policing historic boundaries is still seen as vital for ecological security against potentially proliferate life. Whilst not all non-native species are identified as invasive, concerns surround the possible 'time lags' between arrival, apparent dormancy and sudden escalations in an emerging harm (Simberloff 2013). Containing and regulating non-native species is perceived as necessary to prevent indiscernible and subtle environmental changes apexing as "invasion cliff(s)" (Davis 2009) and resulting in 'invasional meltdown' (Simberloff and Von Holle 1999). Caution around deliberate (re)introductions- already identified as a key practice of rewilding- is therefore motivated by the catastrophic results of many past events, both deliberate and accidental, that have eliminated species, altered ecosystems and facilitated extirpations (Atchison 2015; Seddon et al. 2014; Simberloff 2013a). Consequently, official translocations and (re)introductions are overseen by strict international and national policies (IUCN 2000; IUCN/SSC 2013; DEFRA 2015), though even planned (re)introductions often have unintended consequences (Simberloff 2013). These might relate to lax regulations and monitoring; the complex and unknowable webs of relations which (re)introduced species might affect and, importantly, the different cultural landscapes within which they are emplaced.

Despite the valid ecological concerns, (b)ordering life through a logic of (non-) nativeness is ethically problematic and frequently based upon "meaningless, arbitrary and indefensible" temporal-spatial thresholds (Warren 2007 p. 433). Rather than being a neutral, asocial classification, it is arguably rooted in culturally

embedded “ecological, economic, moral and aesthetic” factors (ibid p. 430) factors. These might carry uncomfortable associations with social-political concepts such as nation and territory, and identity biopolitics which seek to purify and exclude others (Atchison 2015; Biermann and Mansfield 2014; Head et al 2014; Gibbs et al 2015). Likewise, the violent and discriminative militaristic language of invasion is argued to have “political, social and normative significance, but no scientific meaning” (Sagoff 2005 p. 229). Rather than an entirely value-free empirical science, it is suggested the language of “swarming, invading, foreign, and out-of-control natures” perpetuates existing and generates new social-political fears around order and control (Fall 2013 p. 71). In contrast, by focussing on ecological capacities and relations, rewilding potentially reconfigures orthodox frames of spatial-temporal belonging (Sandom et al. 2013). If (re)introduced species behave and interact in an unthreatening relational manner, then such (b)orders, thresholds and aesthetics become reworked and softened (Lorimer and Driessen 2014). Indeed, such thinking coincides with pragmatic discussions about ‘novel’ and hybrid ecosystems and the need for flexibility amidst broader ecological transformations (Hobbs et al. 2009).

### **3.5.3 Wildness, ferality and purity**

If rewilding is a diverse continuum of practices and processes, it is necessary to consider how ‘wildness’ is understood and performed. As discussed earlier in subsection 3.4 and later in 4.2, this has commonly been associated with the imaginary of wilderness, or similar spatialised conceptions founded on exteriority and used to label lives and assemblages perceived to “lie[s] outside...(the) historical and geographical reach” of human society and thus “confined to inhabit[ing] the margins and interstices of the social world” (Whatmore and Thorne 1998, p. 435). These species and spaces, sometimes simultaneously understood as risky and at risk, might become the subjects of orthodox conservation and biosecurity practices. Such spatialised frames also draw on the logics of nativeness, as the “reproductive origin or place of birth” (Lavau 2011, pp. 54–55) of individuals or species become prescient in informing wildness.

As well as spatial modes of (b)ordering, wild and domestic species have historically been classified through morphological and physiological traits. Developments in biotechnology have meant that difference is increasingly framed genetically, a shift that “locates wildness ‘in the genes’” (Lien 2015, p. 9; see also Fredriksen 2015; Lorimer and Driessen 2011). The focus on genetic difference rather than processes and events, Lien argues, becomes a “sorting device...[which can help to identify conservation value...in the messy liveliness...[and] specify with some precision which ones are ‘worth looking after’ and which ones are not” (p. 9). Genetic technologies, then, have generated new ways to enact and practise hierarchies between species in the name of biodiversity conservation. Even though inter-species/sub-species gene flow is far more common and messier than previously thought among both plants and animals (Mallet 2005), for many conservation biologists introgression between native/non-native species or wild-feral-domestic species is a source of concern. As pure species become threatened or vulnerable to changes, “impure bodies are seen not as enhancing biodiversity but as threatening it” (Biermann and Mansfield 2014, p. 266).

Through their genealogical study of Heck cattle, Lorimer and Driessen (2016) highlight how wildness within rewilding practices might be evoked as a multiplicity<sup>18</sup>. Firstly, through the ‘functional’ ecologies of cattle, rather than as “a transcendent form or genetic essence” (ibid, p. 9); secondly, in opposition to domestication; and, thirdly, as the potential for their independent and regenerative qualities as opposed to the maintenance of permanent, primitive states. In practice,

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<sup>18</sup> Heck cattle are a back-bred bovid introduced to OVP and commonly used as part of Rewilding Europe’s (re)introduction projects.

this means that traditionally 'non-wild', or 'de-domesticated' surrogate species, are as valued as more aesthetically congruous ones fitting orthodox understandings of landscape and ecology. This multiplicity of wildness and the ways in which it is co-produced through heterogenous human-nonhuman networks and assemblages, therefore, might be better understood, according to as "a relational achievement spun between people and animals, plants and soils, documents and devices...performed in and through multiple places and fluid ecologies" (Whatmore and Thorne 1998, p. 437). Such an understanding gives space for more "promiscuous topologies", where nonhumans and their places are dynamic and transient, and their "constitutive vitality" emerges from "a confluence of libidinal and contextual forces", rather than "unitary biological essences" (ibid p. 437).

Whilst rewilding might offer new framings of wildness as relational and sometimes proximate, it consequently reframes ethics around ferality and hybridity. Feral animals traditionally occupy a transient place between the domestic and wild, existing as "curiously transgressive beings, neither wild nor purely tame, "in-between" animals that often utilise "in-between" spaces" (Philo and Wilbert 2000a, p. 20). Whilst they tend to occupy liminal and ambiguous physical and ethical spaces, their presence is frequently represented as undesirable (Palmer 2010). However, as with wildness, ferality exerts as a multiple, flexibly applied according to cultural and geographic contexts, sometimes used synonymously with non-native and invasive species, though more generally to categorise nonhumans that have escaped from domestic environments and 'control' (Gibbs et al. 2015; Robin 2017).

Why some species become defined as feral and others not appears relative to context and might relate to the extent to which they "become woven intimately into...society" (Robin 2017 p. 105). Within the biopolitical frames of orthodox conservation and biosecurity, feral and hybrid species threaten the logics of

biodiversity, purity and knowable risk. However, for nonhumans themselves, their hybrid nature often allows them to adapt, flourish and succeed, despite the violent regimes of control they are subjected to, such as wildcat-domestic cat hybrids (Fredriksen 2016) and coywolves (Rutherford 2018). Though these might be understood as “novel animals for novel ecosystems” (ibid, p. 213), they also reflect genetic, phenotypic or aesthetic ambiguities that become troubling not only for conservation and biosecurity practices, but also cultural and social ones, a point discussed further in Chapter 4.



This chapter has sought to consider how rewilding biopolitics might unsettle orthodox modes of ordering, arranging and valuing life and space by pre-existing regimes of nonhuman governance. It considered how such strategies of organisation, notably conservation and biosecurity, are themselves diverse, multiple and incorporate a range of dynamic and evolving knowledge practices and logics. These are not clean and smooth transitions from one set of practices and philosophies to another, but entangle, overlap and interrelate in a variety of ways relevant to social, cultural and ecological context. Similarly, different regulatory regimes converge and diverge, sometimes tessellating neatly at other times more awkwardly. Practices, if understood as assemblages of heterogeneous entities, are constantly in tension, negotiation and flux, variously coherent and noncoherent, and are dependent on the ways in which different human and nonhuman agencies hang together.

## TOWARDS FERAL BO(A)RDERLANDS

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### 4.1 Introduction

Whereas Chapter 3 introduced the multiple biopolitics and modes of ordering associated with orthodox conservation, biosecurity and rewilding, this chapter uses literature from human geography and the social sciences to help build a framework for feral bo(a)rderlands in the UK and further introduce key concepts explored in the empirical chapters. Initially, the chapter once more looks at the historic context of boar, this time in the UK, before considering how the contemporary situation of boar transitioning from farmed to wild, or feral, species might be framed as ‘feral rewilding’. It then goes on to discuss a range of critical work that, firstly, considers how the concept of place is useful when understanding the spatial-temporal relations between humans and nonhumans, as well as the multiple agencies and affects that influence these. Secondly, it looks at literature that has critically engaged with the practices of field sciences and ecology and the role they play in the different, biopolitical modes of ordering discussed in Chapter 3. Finally, the chapter pays attention to the ways in which contemporary strategies of governance have been addressed, and the features that appear key to better understanding the challenges of living with and governing (re)introduced boar.

### 4.2 (Re)introducing UK bo(a)rderlands

This subsection returns to boar and considers their historic presence and politics in the UK, before framing their present situation as one of ‘feral rewilding’ and considering how the generative concept of borderlands is useful to consider human-boar entanglements in the Forest of Dean.

### 4.2.1 Historic bo(a)rderlands

The UK has been boar-less for multiple centuries though they are, to use the ubiquitous mode of ordering, a 'native' species. Archaeological records suggest boar were omnipresent from the early Pleistocene, through various inter-glacial periods, to medieval times (Yalden 1999). In Mesolithic British lowlands, boar were most likely abundant throughout a mosaic of habitats and appear to have been an important food source for nomadic people (Albarella 2010). Their presence in fossil records, however, becomes increasingly elusive during the Neolithic period, a time when human populations grew and spread, and relationships with domesticated, companion species intensified. Chapter 2 outlined how boar and humans had at various times existed in close commensal-prey entanglements, but around this time extensive lowland forest areas were cleared for settlements and sheep-walks, potentially making anthrophillic creatures such as boar a problem and potential risk (Yalden 1999; Wiseman 2000).

By medieval times, far from being a fluid, open landscape, Britain was a striated landscape of territories and borders. Only fragments of wildwood remained, and those of expanse were demarked as 'forest', a legal designation rather than ecological descriptor, that bordered places of resource and amenity exclusively for the aristocracy (Rackham 2000). Within these, populations of 'game' were documented and protected for hunting whilst illicit poaching was governed by brutal punishment, including death (Thomson 2010). Boar would most likely have moved through these forest borders, though archaeological records suggest they had virtually disappeared from the wider countryside and, by the late 13<sup>th</sup> Century, seem to have eventually vanished from royal forests, too (Yalden 1999; Albarella 2010). The reasons are speculative, with Rackham (2000) suggesting the sustained, incremental loss of lowland UK woodland being the root. Wiseman (2000), contrastingly, suggests the swelling economic value of these diminishing forest resources led to stricter regulations on both domestic pigs, through restricted pannage seasons, and boar, through more intense hunting, due to their threat to

woodland regeneration and charcoal production. A further possibility, once more echoing the discussion in Chapter 2, is that up until the 18<sup>th</sup> Century both domestic pigs and boar were physiologically similar and most likely roamed woodlands together. They were, in effect, cohabiting, intermingling and, most likely, interbreeding. As with elsewhere in Europe, the boundaries between domestic and wild animals would have been messy and relatively uncertain, thus, making distinctions between the two ‘unwanted and impractical’ (Wiseman 2000; Albarella 2010; White 2011).

Whilst historic human-boar relations have often been represented through the violent imageries of noble game hunting and sport, their everyday relations appear to have been fraught with tension and insecurity. This becomes apparent in sporadic accounts of (re)introductions to enclosures and estates in the 16<sup>th</sup>-18<sup>th</sup> Centuries after their likely ‘wild’ extirpation. These often tell similar stories of (re)introduced boar, or “wilde swine”, moving through enclosure borders and being captured or “destroyed” due to their transgressions into agricultural, urban and other ‘human’ spaces (Rackham 2000, p. 37; see also Goulding 2003; Gow 2002; Yalden 1999; Yamamoto 2017).

These historic accounts highlight several political tensions that appear ubiquitous throughout past and contemporary human-boar relations, as described in Chapter 2. Firstly, they once more highlight the frequently proximate co-existence of boar and humans. Secondly, and relatedly, they show boar have always been a territorial matter and subjected to different legislative and political techniques of control. Though humans have sought to order boar in different spaces, boar agency and their autonomous movements have consistently challenged the borders between settlements, agricultural land and ‘wild’ spaces. Boar, it appears, have always been a problematic and risky companion. Thirdly, these accounts also show that human-boar relations have generally been violent, and often based upon sovereign modes of governance and control. Boar, as a species, have always been ‘killable’, whether

framed as 'game' or 'pest'. Finally, they also show that tracing boar extirpation from the UK 'wild' is complicated by their historic entanglements with domestic pigs and their occasional (re)introductions to game estates and enclosed woodland (Albarella 2010). In other words, boar appear to have always been ambiguous and ontologically uncertain. They have, it seems, always been monstrous.

#### **4.2.2 Feral rewilding**

As Chapter 1 introduced, from the late 1970s and into the 1980s, changing agricultural landscapes and rural economies (Ilbery, 1991) encouraged the (re)introduction of boar as an unfamiliar, wilder farm animal (Booth 1995). The first farms, located in southern England, acquired boar from zoological collections, notably the Zoological Society for London (ZSL), and kept them in mixed intensive/extensive systems. Primarily, this involved penning breeding males and allowing sows and their litters larger and more comforting spaces. As boar farming grew in popularity, by the mid-late 80s, further animals had been imported from Denmark and Sweden where boar of German and Eastern-European origins were commonly kept on shooting estates. These boar were selected due to their large size and "high health status" (Booth 1995, p. 246), thus, providing a higher quality of meat and minimalising their biosecurity risk. Concurrently, husbandry also evolved and by the early 90s, a time at which there were estimated to be around 40 farms, most boar were bred extensively, primarily on grassland.

The origins of farmed boar, once again, highlights their ambiguous status. Those in the UK, it appears, have descended from animals kept in varying modes of captivity and with differing ontologies of care, whether zoos, farms or shooting estates (Wilson, 2014). This ambiguity is further reflected in the ways in which boar might be slaughtered in the UK. Whereas, initially, boar were classified with domestic pigs and, thus, were exclusively slaughtered in abattoirs, during the 90s policy changed and commercially farmed boar, as with deer, were legally allowed to be field slaughtered by an appropriate firearm and licence holder (Booth 1995).

Furthermore, such legislative changes around the killing of boar have also played a part in diversifying the commercial context of their captivity. Whereas early farms were specifically set up to provide alternative forms of meat, humane field slaughter has contributed to an increase in the number of shooting estates where boar are farmed as 'game' (Sweeting, 2013). Though boar from such enterprises still contribute to the human food chain, particularly at a local and personal scale, their presence is economically driven by the production of 'sport' rather than meat.

Prior to the mid-80s, farmed boar were not specifically covered by any legislation, at which point their growing popularity contributed to their named inclusion in a Modification Order to the Dangerous Wild Animals Act 1976 (DWAA), a policy regulating ownership of a range of exotic species from large mammals to small reptiles<sup>19</sup>. Principally, the DWAA requires owners to apply for licences from local authorities who grant approval if applications satisfy requirements. In addition to the DWAA, boar were somewhat vaguely covered by the Wildlife and Countryside Act 1981 (WCA), a piece of legislation constituting another part of a regulatory, biosecurity framework. Section 14 of the WCA relates to "the introduction of new species", and states:

*"...if any person releases or allows to escape into the wild any animal which (a) is of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state; or, (b) is included in Part I of Schedule 9, he shall be guilty of an offence".<sup>20</sup>*

Part I of Schedule 9 initially listed 42 animals "established in the wild", including species such as coypu, parakeets and grey squirrels, all of whose presence in the

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<sup>19</sup> <https://www.legislation.gov.uk/ukxi/1984/1111/made>

<sup>20</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

British countryside has been contentious and much debated (Matless et al. 2005; Crowley et al. 2018; 2019). Though it was inferred boar were covered as they were no longer 'ordinarily resident' in the UK, there was no specific reference to their presence until 2010.

Theoretically, these two pieces of legislation ought to have prevented, or at least minimised, the risk of captive boar escaping farms and shooting estates. However, almost as soon as boar were introduced to 'secure' agricultural spaces, reports show they were finding ways out (Goulding 2003; Wilson 2014). As Figure 1 (Chapter 1, page 9) highlights, government agencies recorded numerous incidents of 'wild' boar in different locations through the 90s and 00s. Importantly, throughout much of this period there was no official government policy on boar existing in a wild state, though increasing populations persisted, self-sustaining and autonomous. Despite government agencies beginning to carry out research in the late 90s (Goulding et al. 1998; Wilson, 2005), legislatively they turned a blind eye to the presence of boar.

This changed in 2008 when, in response to their increasing visibility in certain locations, notably the Forest of Dean, DEFRA published their 'Feral wild boar in England' action plan (DEFRA 2006; 2008). This followed earlier research and a public consultation which had proposed three scales of intervention in future boar presence: 1) no management; 2) a proactive government led national eradication; or 3) regional management to address concerns. In conclusion, the Action Plan followed scenario 3, stating:

*primary responsibility for feral wild boar management lies with local communities and individual landowners. However, Government will help facilitate this regional management through the provision of advice and guidance. (DEFRA 2008, p. 1)*

Furthermore, though they were previously considered to be a native species, boar were formally classified as feral, a political technique that would help facilitate their regulation. This decision was strengthened by additional legislation in the form of The Infrastructure Act 2015, which amended Part I of Schedule 9 in the Wildlife and Countryside Act (WCA), and specifically named boar, along with beaver, as ‘animals no longer normally present’<sup>21</sup>. These changes show how boar, as a species, have gradually undergone an ongoing, spatial-political transition, from being legitimate, captive animals, to illegitimate ‘wild’ ones.



As rural fauna is changed through deliberate (re)introductions, ecologies, human-nonhuman relations, and systems of (b)ordering are potentially reconfigured. Buller (2004) asks what happens:

*when the ‘wild’ creeps back into the domesticated and humanised nature that is the European Countryside, when familiar rural areas become home again, at least for some people, to a renewed un-domesticated animalia?*  
(p. 133).

Though intentional rewilding projects might pay attention to some, if not all, of these matters, perhaps overlooked are the ways in which (re)introduced species might (re)produce and re-construct ruralities more broadly- the way they function, their aesthetics, assemblages and modes of governance. The return of boar, then, as an event of ‘feral rewilding’, is an interesting example, an ‘unintentional wild experiment’ (Hearn et al. 2014), of the ways humans and (re)introduced species might be thrust together. Though there are similarities with other, out-of-practice

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<sup>21</sup> <https://www.legislation.gov.uk/ukpga/2015/7/part/4>

occurrences of 'spontaneous' or 'auto-rewilding', feral rewilding might be distinguishable in several ways.

Being categorised as feral is not merely a normative process but is also performative, making feral rewilding an inherently and overtly political concern. Ferality underlines how nonhuman lives can transgress physical and moral (b)orders and unsettle understandings of social-ecological belonging, desirability and ordering (Donaldson and Kymlicka 2011; Palmer 2010). Yoon (2017) describes how ferality "evokes liminal, excessive, inappropriate, and transgressively abject connotations", characterisations that sometimes desires actions "to correct, neuter, or even exterminate ecological and political outcasts" (p. 136). Alternatively, Rutherford (2018) suggests it is descriptive of the ways in which humans and nonhumans interact, disturb and encounter one another through difference. Ferality, therefore, is a potential "synonym for symbiosis, always entangling multiple actors in a messy and unending negotiation...ferality is risky. It shreds certainty and violates limits" (p. 217).

Feral rewilding can be generative. Firstly, normatively, it is a means through which to highlight rewilding is a relational achievement that is inherently social, involving multiple human and nonhuman actants to differing degrees, whether as active or passive agents. Relatedly, by reiterating that humans and nonhumans alike act with agency and autonomy, it reflects that both are vulnerable through their relationality. Feral rewilding as a concept, therefore, emphasises the precarity of both being and living with wild, risky, awkward and monstrous Others. Furthermore, feral rewilding specifically relates to nonhumans that were historically present in a locality but were consequently extirpated. As such life is (re)introduced, they unsettle social-politics, cultural landscapes, and bring the messy and complex nature of realities to the fore.

Living with feral species is about living with disorder and, therefore, feral rewilding potentially leads to destabilised, disturbed and noncoherent assemblages of practices that reveal the contingency of relational worlds. Consequently, they simultaneously necessitate multiple responses and adaptations, a require that can be productive. According to Rutherford (2018), ferality offers “a way forward in the politics (and poetics) of ecological revivification and repair” (p. 217). Likewise, Haraway (2008a) also suggests “becoming feral demands- and invites- becoming worldly just as much as any other species entanglements do. ‘Feral’ is another name for contingent ‘becoming with’ for all the actors” (p. 281). Therefore, exploring the implications of ferality, not only its discursive politics, but also its material relations, is an important way of understanding how different lives are entangled together and negotiate one another’s presence in contemporary worlds.

#### **4.2.3 Feral Bo(a)rderlands**

Following on from the generative potential of feral rewilding, thinking conceptually through feral bo(a)rderlands requires paying attention to different ways of living, knowing, performing and ordering boar, and the ways ‘competing philosophies of nature’ (Buller, 2008; Thompson, 2004)- conservation, biosecurity, feral rewilding- converge. In their description of ‘biosecurity borderlands’, (Hinchliffe et al. 2013) suggest there are three critical aspects for successful practices and making ‘safe life’ possible. Firstly, understanding the limitations of knowledge and being open to uncertainty; secondly, acknowledging the multiple circulations and beings that may also interact in heterogenous assemblages; and, thirdly, the ability of management and survey to bring together different practices, observations and knowledges, both formal and informal. Essentially, successfully living with emergent and immanent life requires an openness to difference which, in turn, requires a multiplicity of practices. This emphasis on the necessity of integrated knowledge practices reflects other literature that similarly highlights the need for interdisciplinary, borderland research to better address issues embedded in complex human-nonhuman relations and ‘environmental controversies’ (Whatmore

2009). Interdisciplinary, borderland research is seen as critical in addressing 'conservation conflicts', where qualitative social science is deemed as relevant as the natural sciences which, to date, tend to receive more funding and policy attention (Baynham-Herd et al. 2018; Gutiérrez et al. 2016; Pooley et al. 2017), whilst Enticott (2017) has similarly emphasised the need for qualitative research in veterinary biosecurity practices.

As well as a need to try to open up social complexity, borderland research is about finding ways to do and live differently (Law, 2004). It is, therefore, about ethics, politics and addressing multiple borders, not just intellectual ones, but also ontological ones relating to humans and nonhumans. In the case of feral rewilding, it is important to ask who or what benefits and loses from the unfamiliar and uncanny presence of boar? Who currently answers this question, how, and based on what criteria? Who ought to answer it, along with where boar belong, and if they belong at all? However, it is also important to pay attention to 'what' is involved in politics, not just 'who' (Hinchliffe 2007; see also Law 2004; Mol 2002) and to bring in material, faunal and floral worlds (Buller 2013a; Head et al. 2014; Whatmore 2006). One might ask to what extent can dynamic and diverse life flourish in ways that does not compromise the health, sentience or affirmative agencies of others? Or, how we can better know the lives of others and live with them? According to van Dooren et al. (2016), "it matters which questions we ask, which modes of inquiry we adopt, which practices of mediation, performance, making and translation we employ- as well as which stories we tell" (p. 11).

If boar have been difficult historic companions in the UK and are bound up in complex contemporary controversies in Europe due to their persistent transgressions and churning of (b)orders, the question is what are the implications of their feral rewilding in the UK? How are they destabilising existing and co-constructing new understandings of place, nature and belonging? What kind of social relations are they (re)making and how are these being negotiated by human-

nonhuman cohabitants? What kind of political techniques, legislative and technological interventions have been implemented to regulate and intervene in their presence? To help consider these questions, the chapter now turns to four bodies of literature that can better help understand feral bo(a)rderlands: place, mobilities, scientific knowledge production and governance. These provide important ways through which to contextualise biosecurity and rewilding biopolitics within cultural landscapes.

## **4.3 Locating Animals**

### **4.3.1 Space and Places**

Decentring humans, unpacking the myth of a singular nature and enlivening the ways in which different worlds are shaped has encouraged work within animal and more-than-human geographies to explore how “animals matter individually and collectively, materially and semiotically, metaphorically and politically, rationally and affectively” (Buller 2013a, p. 3). This is vital as, in Philo and Wilbert's (2000) words, “humans are always, and have always been, enmeshed in social relations with animals to the extent that the latter, the animals, are undoubtedly constitutive of human societies in all sorts of ways” (p. 3). These relations are complex and embedded with a multitude of power dynamics, ethics, material-semiotics, and are situated within the transient spacetimes of place and landscape.

Philo and Wilbert (2000) identify two primary means through which the spatial-temporalities of animal geographies and their human relations can be conceived. Firstly, they propose ‘animal spaces’ as relating to the “classificatory schemes” (ibid, p. 6) humans have devised to identify, position and (b)order the presence of animals. These conceptual placings, employing a range of temporal, spatial, ecological, biological and aesthetic logics as described in Chapter 3, “fix[ing] animals in a series of abstract spaces...cleaved apart from the messy time-space contexts, or concrete places, in which these animals actually live out their lives” (ibid, p. 6-7).

Classificatory schemes organising nonhuman life, such as those underpinning orthodox conservation, frequently perpetuate imaginaries that locate animal lives on a spatial-moral continuum collocating civilisation, proximity, society and domestication; in contrast to spatial wilderness, embodied wildness, distance and nature (Buller 2004; Emel et al. 2002; Philo and Wilbert 2000). Desiring certain forms of life in certain spaces has thus allocated urban settlements their home-dwelling domesticated companions; the countryside its relatively tamed livestock; and wild-land its untamed and risky 'wild' animals. Some companion species and individuals, such as livestock and pets, become included through their utility, placidity or mutualistic capacities, whilst others become excluded and deemed inappropriate, perhaps marginalised as pests or vermin (Buller 2004).

Human orderings and conceptions of animal spaces, however, are often illusionary and the "explanatory limitations (and inherent porosity) of pre-fixed categories and structures" consistently unsettled (Buller 2013, p. 234). Rigid classifications and orders are problematic, unreflective of the messiness and heterogeneity of life, nor the relational agencies of nonhumans to co-produce and configure space. Philo and Wilbert (2000), therefore, also offer an alternative concept, 'beastly places'. This foregrounds the liveliness, creativity and embodied becomings of animals which are "transgressing, perhaps even resisting, the human placements....creating their own 'beastly places' reflective of their own beastly ways, ends, doings, joys and sufferings" (p. 13). Paying due attention to the movements, interactions, places and cultures of animals is critical, as Philo (1998) comments, to generate "a sense of animals as *animals*: as beings with their own lives, needs, and (perhaps) self-awarenesses, rather than merely as entities to be trapped, counted, mapped, and analysed" (p. 54 emphasis in original). Attending to 'beastly places', therefore, is one of ethics.

A rich vein of literature has explored how 'animal spaces' and their multiple (b)orders have been consistently undermined by the beastly behaviours of animals

themselves, and debates about the multispecies power relations defining animals as 'in/out-of-place'. A key spatial ordering of nonhuman belonging has been along a rural-urban axis. Framing these as diametrically opposed appears problematic, however. Firstly, as already emphasised in Chapters 2 and 3, relational thinking has explained space as topological, heterogenous, networked and fluid in ways that destabilises the definitude of such a border (Massey 2005; Murdoch 2006a; Whatmore 2002). Secondly, imaginaries of urban environments make them places of people, rather than wildlife. This persists despite research paying increasing attention to "more-than-human urban geographies" (Braun 2005, p. 635), the 'anima urbis' and multiple ways "the breath, life, soul and spirit of the city...is embodied in its animal as well as human life forms" (Wolch 2002, p. 721). In contrast, the countryside has often been considered its "faunistic foil" (Buller 2013, p. 235). However, as much as urban spaces, rural locations are diverse and complex, replete with (b)orders and regulations that make certain nonhumans appropriate and inappropriate according to specific rural formations and patterns (Jones 2006).

Porous borders and animal agencies mean wild lives move in ways that destabilise, transgress and resist the allotted spaces within which they might be conserved or secured (Philo and Wilbert 2000a). Such mobility highlights how humans and nonhumans become intimately intertwined, both historically and in increasingly complex ways in the Anthropocene. Whilst humans have tended to emplace 'wild' animals in rural spaces, many animals construct their own places within urban locations and are synurbic. Some, like pigeons, have adapted to urban environments and persisted for centuries (Jerolmack 2008) whilst other, as in the case of possums, have rapidly adapted as local urban environments have expanded and developed (Power 2009). Flying foxes displaced from their symbiotic forest places and by rural persecution have settled in towns and become 'urbanites' (Rose 2010), likewise, white ibis have migrated to artificial urban lakes as their own historic habitats have disappeared (McKiernan and Instone 2015). While some animal inhabitants are highly visible in co-producing more-than-human urban

spaces and cause tensions, such as macaques (Barua and Sinha 2017), others, like water voles, are less so (Hinchliffe et al. 2005).



Of particular interest to this thesis, however, are the “borderland’ communities in which humans and free animals share space” (Wolch et al. 2002, p. 188). Arguably, this may include the aforementioned syn-urbanites that successfully and persistently inhabit a “trans-boundary status” (Buller 2013, p. 239). However, it also covers those that move and inhabit space in more unpredictable, transient and liminal ways. These might be discreet “shadow population[s]...spanning the phylogenetic scale” (Wolch et al. 1995, p. 736), or else charismatic and visible creatures that confront humans and potentially destabilise constructions of space. Inhabiting or moving through borderlands, edges and marginal spaces in proximity to humans frequently leads to a multiplicity of material encounters and contested, discursive landscapes. Numerous studies have focused on animal movements across rural-urban interfaces and in the context of expanding urban environments, for example, Yeo and Neo (2010) have paid attention to macaques on forest-urban borderlands, whilst cougars (Collard 2012; Gullo et al. 1998) and coyotes (Blue and Alexander 2015) in urban peripheries have been variously documented.

Importantly, it is not just metropolitan borderlands where animals move through porous boundaries and reconfigure space, but also within rural landscapes themselves. For example, elephants moving through villages, agricultural land and protected areas (Barua 2014a; Barua 2014b; de Silva and Srinivasan 2019); badgers moving in and out of farms (Cassidy 2015; Enticott 2008a); or else wolves entering alpine pastures (Buller 2008). Some wild, transboundary species become accepted as companions, fitting with human ideals perhaps on account of their benignity or lack of threat. For example, Whale and Ginn (2017) have shown how sparrows have become a part of human worlds to the point where their decline and absence might be ‘mourned’. On the other hand, some species become reviled and represented as monstrous, such as rats (Clayton 2019).

However, it is important to qualify these generalisations. Firstly, the place of animals within complex, 'moral landscapes' fluxes in relation to transient spatial-temporal contexts (Buller 2008; Matless et al. 2005). Indeed, all species are entangled in complex human relations which flow and churn, possibly shifting through periods of admiration, protection, respect, extermination and revulsion. Various accounts speak of how the moral status of red kites (Brettell 2016), elephants (Lorimer, 2010), ospreys (Garlick 2018), pigeons (Haraway 2008b), wolves (Buller 2008; Lopez 1978) and otters (Matless et al. 2005), amongst other species, have shifted through time and place. What many of these species share in rural locations, however, is that there has been a shift from being unwanted, undesirable and the target of eradication; to wanted, desirable and protected. Through the discourse of conservation, many species have been rehabilitated as "symbolic heralds of a newly reinvigorated naturalness" (Buller 2008, p. 1587). A sense that rural faunal assemblages have become too domesticated, evolving beliefs in the authenticity and iconography of wildlife and concern over environmental degradations, has given space for a "highly differentiated emphasis on the wild and the 'natural'" (Buller 2004 p. 137). Many species have been brought in from a distanced place of myth and legend, to one of scientific and popular appreciation. Such transition can be witnessed through the emergence of multiple forms of conservation discussed in Chapter 3.

However, the second qualification is that this is not an absolute change, but a partial one. Therefore, whilst nonhuman ontologies, or 'philosophies of nature', are evolving, they are also in competition with alternative understandings of wildlife (Thompson 2004; Buller 2008). Celebrating wildness can generate bio- and ontological insecurity, leading to social conflicts between different groups, publics and individuals holding divergent beliefs, values and worldviews (Redpath et al. 2015; 2013). Whilst certain imaginaries of rural areas and their "faunistic icons" might be changing (Buller 2004 p. 133), they come up against others which are embedded in particular conceptions of identity, morality and nature (Bell 1994;

Enticott 2003), or else narratives of nature that demand control (Maye et al. 2014). The material-semiotic presence of nonhumans and the extent to which people think they belong is thus frequently tied to deeper, long-standing political matters, contested moral geographies and contrasting frames of knowledge. This has been highlighted through studies on animals with a long-term, cultural presence in particular spaces, such as debates on fox-hunting in the UK (Woods 1998; Milbourne 2003), spotted owl conservation in the Pacific-Northwest (Proctor and Pincetl 1996), as well as resurgent presences such as recolonising wolves in the French Alps (Buller 2008), and unofficially (re)introduced beavers in the UK (Crowley et al. 2017).

### **4.3.2 Movements and mobilities**

So far, the thesis has at various points explored how humans and nonhumans are interconnected, as well as the ways (b)orders and spaces appear increasingly unstable in the contemporary world. This subsection considers the concept of place and how this relates to movement and rhythm. As outlined in Chapter 2, theorising all animals, whether human or nonhuman, as movements and evolving lines of growth is one possible way to emphasise their entangled agencies and, consequently, their capacity to co-produce places. When considered in this manner, it opens ways in which to consider how (re)introduced species alter places and establish a suite of affective and material relations steeped in unfamiliar spatial-temporal movements, something which has been relatively overlooked by work on (re)introductions.

The concept of place is ubiquitous but often vague, a reflection of its simple vernacular usage but complex underpinnings (Cresswell 2015). Rather than fixed and bound cartographic entities, relational thinking frames places as dynamic spatial-temporal configurations of humans, nonhumans, technologies and ideas, amongst other factors. They are both material and discursively shaped, actual and virtual. Amin and Thrift (2002) suggest they “are best thought of not so much as

enduring sites as moments of encounter, not so much as ‘presents’, fixed in space and time, but as variable events; twists and fluxes of interrelation” (p. 30). Similarly, Massey (2005) argues that if we are to understand humans and nonhumans- whether living bodies or geological formations- as dynamic and transient becomings, then places are merely points “where spatial narratives meet up or form configurations, conjunctions of trajectories which have their own temporalities” (p. 139). Places, therefore, “do not so much exist as *occur*” (Ingold 2008b, p. 13, emphasis in original).

Cresswell (2015) draws on the concept of assemblages to help understand the relational nature of place. Citing De Landa (2006), he explains how assemblages ought be thought of as contingent formations “whose properties emerge from the interactions between parts” (p. 5), with meaning established through the fluxing of different entities. If relations alter or parts are removed or added, rather than cease they alter and make new “unique wholes” (ibid, p. 5). When reforming places as assemblages, it is important to attend to two important axes. One of these connects “expressive existence”, or meaningful and cultural entities, with “material existence”, such as the locale and physical landscape (ibid, p. 54). The other axis relates to forces of “coherence” and “rupture”, or territorializing and deterritorialising forces (ibid, p. 54). These inter/intra-agential forces mean an “assemblage can have components working to stabilize its identity as well as components forcing it to change or even transforming it into a different assemblage. In fact, one and the same component may participate in both processes by exercising different sets of capacities” (ibid, p. 54).

These countervailing forces offer an important way to think through the tensions between transient, dynamic life, and traditional notions of place and landscape that often propose permanence and stability. Key to understanding place, it seems, are the diverse movements, mobilities and affective relations that might cluster together in permanent motion (Seamon 1980; Wylie 2007; Ingold 2011).

Wunderlich (2010) suggests it ought to be conceived as 'place temporality', or "a sense of time that is place-specific" (p. 46) and gives locations distinctive spatial-temporal feelings and aesthetic formations. Here, aesthetics are not understood as detached and distanced evaluations of quality, but are based upon sensual experiences, affective intersubjectivities and performative engagement. These might be experienced twofold; firstly, as repetitive, continuous and unconsciously experienced routines; and, secondly, as vivid and distinct moments that, together, contribute to the sensory and aesthetic experience of everyday life.

As critical as the familiar and repetitive, however, are the ways in which repetitions interact with less regular occurrences. Much literature on mobilities has been influenced by the work of Lefebvre (2004), who posits "[E]verywhere where there is interaction between a place, a time, and an expenditure of energy, there is *rhythm*" (p. 15, emphasis in original). These rhythms are diverse, and might be diurnal, circadian, weekly, seasonal or even more irregular (Edensor 2010a; Wunderlich 2010). Such weavings of diverse and heterogenous movements, rhythms and temporalities have been termed, variously, 'polyrhythmic ensemble[s]' (Crang 2001), 'place ballet[s]' (Seamon 1980) and 'polyphonic assemblages' (Tsing 2015). These offer similar ways of conceiving the spatial-temporal milieu of the multiple routines, habits, movements and sensuous practices that might flow through or from a situated location. Importantly, these are not just isolated and local, but part of broader assemblages of life, technologies, mobilities and information which connect multiple places together (Massey 2005).

Places, then, are shaped by the ways particular rhythms coalesce or else form aesthetic patterns that are recognisable. Ingold (2008) describes them as not just formed through movement, but when movement "*along* turns into movement *around*" (p. 13 emphasis in original). Like the lives that co-constitute them, though they are always becoming, they can give the illusion of stability and intransience:

*“many rhythms offer a consistency... regular routines and slower processes of change mesh with the relative brevity of the human lifespan to provide some sense of stability (p3)...a multitude of habits, schedules and routines that lend to it an ontological predictability and security” (Edensor 2010a).*

Place and everyday life are performative. Constantly reaffirming practices, the “daily rhythms of being...expect(ing) the world to keep on turning up...help(ing) precisely to achieve that effect” (Thrift 2009, p. 102), generate a continual “place-binding” as opposed to a state of being “place-bound” (Ingold 2008b, p. 13). ‘Ontological predictability’ and ‘security’, therefore, might be found in familiar choreographies of movements and lives that appear to conform and synchronise according to the expectations of individuals, thus allowing social collectives to function in relation to their constituent parts. Linking the present, past and future, they are multi-temporal and also co-constituted with shared and individually experienced ‘memory ecologies’ which link publics and individuals, landscapes and homes, everyday day rhythms and deeper temporalities, all of which give meanings to practices and physical locations (Jones 2011). Memory itself also has rhythms and cycles, and functions through “different modes, whether it is carefully orchestrated or floods over us, whether it is felt to inhabit commonplace actions, treasured sites or discarded goods” (Lorimer 2007a, p. 6).

However, the immanence of life and its emergent possibilities mean there are tensions between repetition and regularity, and the dynamic and vital (Edensor 2010a). Even though places are contingent and open-ended, habits and routines can become too settled into eurythmic, or stable, states, becoming unreflexive to change or disruption. This leads to what Lefebvre (2004) refers to as arrhythmia, a kind of pathological, abnormal and disruptive state caused by irregular and unexpected patterns that have negative consequences. Therefore, though “harmony and dissonance” (Tsing 2015, p. 157) are both a normal part of the multi-

temporalities of assemblages, sometimes these might become too disruptive and churn feelings of (in)stability.

If, in Thrift's (2009) words, the “fabric” of daily life is an “extraordinary achievement” (p. 97) of things, elements, bodies and technologies that continually come together and interact in different ways, it is important to pay attention to more-than-human rhythms. Situated within climactic atmospheres and weather patterns, human lives “are continually being woven in the rhythmic alternations of the environment- of day and night, sun and moon, winds and tides, vegetative growth and decay, and the comings and goings of migratory animals” (Ingold 2012, p. 77). Paying attention to the “interdependent rhythmic behavior” organisms display (Adam 1995, p. 128), researchers have been able to explore different modes of living. However, whilst this is common in ecological and biological sciences, through work on phenology, symbiosis and other interrelations, this is still fairly limited within social sciences. While work focuses on the relational rhythms and more-than-assemblages of various companion species such as horses, dogs and cows (Evans and Franklin 2010; Haraway 2008b; Holloway and Morris 2007), anglers and fish (Bear and Eden 2011) and ecological fieldworkers (O’Mahony et al. 2018), there is little that pays attention to the choreographies of wildlife and humans.



Discussion on movement and rhythm also emphasises the critical role of embodiment in contributing to the co-production and formation of place. In Ingold's (2000) words, meaningful experience emerges from encounters with:

*real-world creatures, endowed with powers of feeling and autonomous action whose characteristic behaviours, temperaments, and sensibilities one gets to know in the very course of one’s everyday practical dealings with them (p. 643).*

The capacity to 'get to know' through experience underlines the importance of agency and the affective capacities of different actants to influence encounters, atmospheres and social assemblages. According to Anderson (2011), affect is the "unformed and unstructured intensities that, although not necessarily experienced by or possessed by a subject, correspond to the passage from bodily state to another and are therefore analysable in terms of their effects" (p. 8). It is, therefore, "an impersonal force resulting from encounter, and ordering of relations between bodies which results in an increase or decrease in the potential to act" (Thrift 2009, p. 104). Affect might be experienced through an array of haptic, aural, olfactory, ocular and even gustatory triggers. Touch, sound, smell, sight and tastes are all potentially bound up in embodied engagements between (animal) subjects and their environments.

To further understand interspecies encounters and intersubjective affects, Lorimer (2007) develops the concept of 'nonhuman charisma' which he arranges into overlapping ecological, aesthetic and corporeal forms. The charisma of organisms, Lorimer explains, might be defined as "the distinguishing properties of a nonhuman entity or process that determine its perceptions by humans and its subsequent evaluation" (ibid, p. 915). Rather than being about essential properties, or 'affordances', however, it is understood as "the agency potentials performed by different organisms...constrained by the consistencies in an organism's corporeal properties...and by those of the human it encounters" (p. 927). Whereas ecological charisma relates to the specific physical and behavioural characteristics of nonhumans that make them detectable to human senses, aesthetic and corporeal charisma describe the impacts of appearance, sensory engagement and visceral encounter. Depending on the nature of this charisma, different species induce a range of responses and feelings; positive and negative, 'awe-some' and 'awe-full'; endearment and disgust; attraction and fear.

Importantly, the affective nature and composition of encounters is affected by more than just charisma. Firstly, movement matters. Rather than being static, multispecies encounters have different forms, directions, trajectories and velocities of motion (Bull 2011). Trotting, running, stalking, diving, flying, swooping, crawling, slithering, circling, herding, migrating. Furthermore, encounters are never merely between two things but occur within wider contexts of place and a complex milieu of interrelations that co-produce emergent affective experiences (Thrift 2009). Finally, though there is a tendency to focus on the future-present, Jones (2011) emphasises that “[W]e are conglomerations of past everyday experiences, including their *spatial textures and affective registers*” (p. 1, emphasis in original). Memory, Jones is keen to stress, is a key component of living and encountering others, feeding into present-future trajectories, encounters and ways in which we negotiate space.



This subsection has provided part of a conceptual frame through which to consider how the (re)introduction of boar might affect and alter pre-existing relations in the Forest of Dean, as well as offer ways in which to foreground the agency of boar within a textured, rhythmic cultural landscape.

#### **4.4 Scientific knowledge practices**

Having considered the significance of space, place and mobilities, this subsection considers the role of formalised knowledge practices i.e. science, in mediating human relations with the nonhuman world. More specifically, it considers literature that explores how such knowledge is produced through complex assemblages of sites, technologies and bodies, which are often held together by unspoken and unseen experiences and skills.

Late-modern, neo-liberal modes of political organisation have been arranged around a need to know territory, what it consists of and how these should be governed, whilst not necessarily needing to control these directly (Murdoch and Ward 1997). As discussed in Chapter 3 through the biopolitical frames of conservation and biosecurity, an integral aspect of (b)ordering territory is through 'expertise', measurement, quantification and calculated administration. Thus, 'expert' practices "make visible domains of life that were once invisible" (ibid, p. 308) to both policy makers and the public, generating particular knowledges that can circulate widely in the public realm and gather forms of authority (Latour 1999). Statistical representations of nature and wildlife and the practices that produce them are employed by various actors involved governing nature, including the state and NGOs. This simplifies complex and unique multi-natural realities, ecosystems and processes to digestible information palatable for politics (Lorimer 2015).

Nature, as a singular entity, has been made knowable, represented and mediated through various scientific knowledge practices and assemblages, thus facilitating its regulation and management (Latour 1993). Though the modernist binary alluded politics represented humans and scientific knowledge was responsible for objectively translating the nonhuman world, rather than being free of values and 'found' science is made and performed through historically specific, culturally situated practices (Castree and Braun 1998). Scientific practices are bound up with values and interests that reflect the practices that enact their knowledge and the societies within which they take shape (Pickering 1992; Latour 1993). According to Latour (2004), this makes it impossible for science and politics to work separately. Rather than distinct epistemologies, 'politics-with-science' works on the same entities. The instruments and practices of science allow the body politic to understand some of the entities for which it needs to account, and politics facilitates a way through which these multiple entities might be collated, graded and (b)ordered to enable the functioning composition of the world. Facts and values cannot be distinctly separated. Therefore, the epistemologies used to represent nonhumans are, themselves, a political act.



An important aspect of scientific assemblages are instruments, technologies and other equipment, whether it be in the laboratory or the field sciences. Latour (2011) refers to the ‘inscription’ and ‘translation devices’, ‘immutable mobiles’ and ‘calculation centres’ that help make the nonhuman world accessible and comprehensible to scientists who can then circulate such references (Latour 1999). These technologies, therefore, have a critical political role, for they:

*allow faraway phenomena to be ‘captured’ by the centre...thus allowing a ‘domestication’...to take place...In this fashion, inscription devices permit those who consistently remain at the centre to become easily familiar with distant entities, events and places [bestowing] the ability to dominate many places and many times (Murdoch 1997, pp. 741–742).*

Technologies allow different worlds to be circulated through space and are frequently used to support and empower the knowledge claims of key actors handling them. Importantly, they also allow scientific practices themselves to translocate and be mobilised from one situation to another, giving further legitimacy to the knowledges produced through notions of validity and reliability.

As shown through the multi-disciplinary literature used in this thesis (see Chapter 2), technological advances have dramatically changed human awareness of nonhuman lives and been increasingly integrated into complex monitoring assemblages which serve a multitude of regulatory conservation and security purposes (Adams 2017; Verma et al. 2017). Developments in radio and GPS technologies have enhanced spatial-temporal understandings of animal mobilities, giving rise to the discipline of movement ecology and making life ‘trackable’ (Benson 2016), whilst genomics are now able to trace genetic histories and genealogies (Hodgetts and Lorimer 2015). Making animals trackable, therefore, is performed through different scales of vicinity and intimacy. For example, some technologies, such as GPS tagging birds (Whitney 2014), turtles (Srinivasan 2014), and radio-tracking elephants (Barua 2014) require direct bodily interventions and

human-subject proximity. Others, such as ultrasonic bat detection (Mason and Hope 2014), necessitate certain degrees of spatial proximity but not direct, tactile encounters. Furthermore, remote technologies such as drones monitor and survey without the need for proximate interspecies relationships and immediate human intervention (Anderson and Gaston 2013).

Such technologies and their associated practices all facilitate the monitoring of individual animals through space and time, translations that become bound up in the politics and territorialisation of space. The gathering accumulation of statistical and digital data has also informed an increasing role for algorithms and calculation in conserving and securing nonhuman life (Adams 2017). As computers facilitate a new biopolitics of monitoring through modelling, the collation of data, databases and practices of scaling have gained prescience, requiring multiple ontological decisions and forms of boundary-making (Turnhout and Boonman-Berson 2011). Many of these technological developments weave threads through conservation and discourses of biosecurity, both practically and epistemologically (Benson 2010), and are tied to the modes of ordering and valuing life discussed in subsection 3.5.



Critically, however, technologies alone do not objectively and autonomously produce conservation and biosecurity knowledges. Rather, they are components of complex, heterogenous assemblages, imbricated and situated within human performances in more-than-human worlds. Furthermore, though scientific procedures, including ecological field sciences, are often portrayed as stable, transferable and replicable, practically, they are contingent and subjective. As Lorimer (2012) explains, thinking with multi-natural ontologies rather than a singular nature means “[S]cience in general and conservation in particular are presented not as disembodied and dispassionate observation but as a skilled, affective and multisensory ecology of practises” (p. 599). Eden (2008), studying forestry practices, describes ‘the field’ as a “shared space” that “enables knowledge workers to exploit the uncertainty, heterogeneity, and discretion in environmental

science and management more readily than do other spaces, rendering these qualities more beneficial than problematic” (p. 1018). Likewise, Waterton (2002), discussing different methods for vegetation surveying and classification, found such practices require experienced practitioners and a continual re-negotiation and re-ordering of knowledges. However, rather than inherently problematic, these uncertainties become integral and “open links in the chain of knowledge being made”. Field practices and spaces, therefore, are not standardised normative systems, but are “performative of their cultural shaping and conditioning...envisagings...and interpretative spaces” (p. 190-193). Similarly, Lorimer (2007) emphasises the performative aspects of ecological monitoring and ways it is “emergent from the operation of a particular assemblage of people, practices and technologies” (p. 553).

The affective and intersubjective relations and atmospheres of ecological work have also been increasingly explored by critical research. Candea's (2010) work on meerkats, focussing on human-nonhuman bodily interactions and corporeality, challenges the representation of scientific practices as “rational, detached and distant” (p. 253). Rather, he frames such ethology as a cultivated ‘interpatience’ between humans and subjects. Likewise, Alcayna-Stevens' (2016) research on tropical forest researchers reveals how bodies and the field environment are “suffused with meaning” (p. 850) rather than neutrality. They are, in other words, places that become learnt through affective engagements and interaction. Lorimer's (2008) work on corncrake surveying and census probes the complex system of multispecies negotiations which emphasise how “body, affect and skill” and the “place-bound act of “becoming” (p. 327) are critical to translating nonhuman life. Arguing that field sciences, outwardly at least, seek to oppress the subjective researcher, he contrastingly describes scientific processes as an intimate and “deeply affective” (p. 384) assemblage of different skills, affective capacities and encounters with nonhuman charisma. Fieldworkers and their subjectivities, therefore, are critical ‘tool[s] of research’, bound up within sociotechnological

assemblages, rather ‘disembodied’ entities (Despret 2013) or mere human-nonhuman ‘interface[s]’ (Latour 2004a).

Multispecies work, therefore, requires researchers to make themselves ‘available’ through the process of ‘attunement’ to nonhuman difference (Despret 2004). Developing such ‘somatic sensibilities’ (Greenhough and Roe, 2010) might require care and empathy learnt through encounter. However, a significant challenge can be establishing knowledge of elusive nonhumans, those of “skulking invisibility” (Lorimer 2008, p. 382). Hinchliffe (2008) describes the uncertainty of practices making rare species, such as black redstart, present, partly due to the alternative, nonhuman ‘space-times’ they inhabit. Being reflexive to such nonhuman difference into fieldwork, Hinchliffe et al. (2005) suggest, requires alternative ways of ‘reading’ presence and incorporating nonhuman knowledge into systems of translation. This might involve attuning to the tracks, traces and trails of nonhumans, such as water voles, or wolves (O’Mahony et al. 2017).



This subsection has considered the role of data, technology, affect and skill in conservation and security assemblages and the production of their associated knowledges. However, such assemblages are often coalitions of diverse, material practices, frequently informed by multiple ontologies which are spatially and temporally situated (see Mol 2002). To help understand the way in which these become coherent and successful, they might be understood as ‘ontological choreographies’ involving “the dynamic coordination” or “deftly balanced coming together of things” (Thompson 2005, p. 8; see also Law and Lien 2013; Lorimer 2015). Techniques, knowledges and socialities which “might appear to be an undifferentiated hybrid mess” (ibid, p. 8) or ontologically distinct are brought together innovatively in places and situations for things to happen. Importantly, choreographic coordination has two key aspects, “the grafting of parts and the calibrating of time” (ibid, p. 9). The first of these is spatial and relates to the configurations and ways in which the properties, processes or capacities of one

entity are coordinated to work with another to make something possible. The second engages with the multiple temporalities that might flow through these entities, for example, biological cycles or linear, structured orderings of working days, weeks or years. Successful practices and knowledges thus rely on choreographies that emphasise spatial-temporal coordination and the active seeking of ways in which to bring things together.

Due to the heterogeneity of these factors, as with any gatherings and assemblages, choreographed practices are inherently “precarious and uncertain” (Law and Lien 2013, p. 365). This complexity is often overlooked by formalised scientific narratives that, in Law's (2004) terms, ignore the ‘hinterland’ of bodies, technologies, affects and more-than-human environments described above. Science, as with any social practice, is messy and “emerges as an effect of *masses of little overlapping and variably successful practices*” (Law and Singleton 2013, p. 15, emphasis in original).



This subsection explored literature that helps consider the role of scientific practices in producing official translations of boar in UK bo(a)rderlands. By paying attention to the bodies, inanimate materialities, technological devices and atmospheres gathered together, it has shown that such knowledge is often the results of a contingent and precarious endeavour. Furthermore, it has also shown that these might rely upon carefully choreographed spatial-temporal relations.

#### **4.5 Participating and governance**

Finally, this subsection turns its attention to the ways in which contemporary governmentalities have arranged and distributed authority, responsibility and power. This is important to help contemplate how the politics of feral rewilding has been arranged, and to help understand the ways in which different actors are assembled within regimes of governance.



Governmentality is a nebulous concept that describes the ways in which different tactics, rationalities and technologies are thought of and made practicable in the regulation and organisation of territories (Collier 2009). In the UK, the end of the 20<sup>th</sup> Century was characterised by a neoliberalised de-scaling of the state which broadened participation in policy making and demanded a more co-ordinated delivery, often through private and public partnerships (Woods and Goodwin 2003). Such a change is described through the concept of governance, referring to a governing style which blurs the boundaries between and within public and private sectors, generating 'self-organising, interorganisational networks' that often align with markets, and existing hierarchies of power and control (Rhodes 1996). Rather than being a form of government, governance might be understood as an alternative mode through which society is governed and governs through changing conditions, relations and orders. These are increasingly conducted "beyond-the-state" and through "institutional or quasi-institutional arrangements of private, civil societal and state actors" (Swyngedouw 2006, p. 1991). These state-civil society relationships have been reorganised threefold. Firstly, by externalising state functions through deregulation and privatisation; secondly, by delegating regulation to higher levels of governance; and thirdly, by delegating responsibility to localised governance arrangements, organisation and practices. Therefore, decentralisation can be seen as creating a vertical as well as horizontal distribution of responsibility, or a simultaneously 'multi-level' and 'multi-actor' strategy of organisation.

Where once state institutions tended to define and organise Nature(s), environmental and wildlife policy has increasingly relied upon deliberative and participatory approaches towards governance and policy implementation (Crowley et al. 2017; Owens 2000). The state's role has, thus, increasingly become one of funding, facilitation, negotiation and legislation, with responsibility spread through a range of actors, a key trait of neoliberalism (Adams et al. 2014). This has led to a

multiplicity of shifting strategies, discursive claims and sets of power relations running through conservation practices, including rewilding (Arts et al. 2014; Dinnie et al. 2015). Similarly, in many countries matters of biosecurity are also spread across multiple agencies and organisations. In the UK, a 'traditional' or 'sectoral' regulatory biosecurity framework has emerged, primarily evolving through a history of diverse interventions in agriculture, primarily in the name of livestock health (Donaldson 2013). Responsibility has been diffused and increasingly placed upon veterinary scientists and practitioners who have become located at the centre of government policy, as well as farmers and other landowners expected to enact border securities and implement best practice protocols (Enticott et al. 2011). Alongside these, a broad range of government affiliated bodies are involved in steering wildlife conservation and biosecurity policy, as well as engaging local authorities and various contracted experts in regulation (Donaldson 2013).

Such multi-actor, stakeholder led strategising is often portrayed as facilitating a democratic, participatory, pluralist and deliberative approach to political decision-making. However, in practice, this might not necessarily come to bare. Indeed, Keulartz (2009) suggests "[T]he inclusion of an ever-growing group of stakeholders with different and often diverging interests, ideas, views, and values will more often than not lead to conflicts over the future of nature and the landscape" (p. 446). Rather than entirely replacing the state, governance becomes a hybrid political form that might simultaneously create new but affirm old political choreographies. The inclusion of new social groups and actors potentially diminishes the position of others, whilst already powerful ones might consolidate their position, and marginalised ones become further excluded (Arts et al. 2014; Swyngedouw 2006). Though multi-actor arrangements are often formed through the ambitious discourse of horizontal, non-hierarchical interactions, access to decision-making, and organised inclusion of stakeholders there are frequently tensions over inclusion, openness and disempowerment in practice. Though governance regimes emphasise the nascent authority and responsibility of communities and publics (such as groups, partnerships etc), this might not necessarily empower

them. On the contrary, loosely coded or insufficiently enacted regulatory frames can result in “new constellation[s] of governance articulated via a proliferating maze of opaque networks, fuzzy institutional arrangements, ill-identified responsibilities and ambiguous political objectives and priorities” (Swyngedouw 2006, p. 2000). Amidst such messy enactments, decision-making can lack clarity, as found by Arts et al. (2014) when looking at species (re)introduction procedures in Scotland.

Uncertain political processes and accountability can mean ultimate responsibility for the consequences of risk events becomes unclear (Woods and Goodwin 2003). In the case of biosecurity practices, devolved responsibilities mean both governing collectives and their actions rely upon reactive, fragmented and inefficient measures (Donaldson 2013; Outhwaite 2013). For example, in identifying the issue of dissipated responsibility in the governance of bTB measures, Enticott and Franklin (2009) suggest there is an ‘institutional void’ arising when there is no longer a singular (state) actor driving decision-making, nor taking responsibility for the consequences of situations and actions<sup>22</sup>. Donaldson (2013) suggests such occurrences might be because multi-actor collectives essentially regulate ‘societal risks’ and those that take responsibility open themselves up to ‘institutional risks’. These are understood as “the reputational, operational and financial costs that an organization that ‘owns’ a particular societal risk must face in managing that societal risk” (p. 68). Taking responsibility appears to have more repercussions than avoiding it, particularly in circumstances where there are financial implications of doing so, as much as reputational ones. Importantly, however, institutional voids don’t necessarily foreclose effective practices, but may allow new knowledges and

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<sup>22</sup> The concept of ‘institutional void’ is first proposed by Hajer (2003).

logics to emerge, forming new sets of relations and assemblages (Enticott and Franklin 2009).



A final, related aspect of this shift from a top-down form of government towards a more inclusive strategy of governance lies in conceptions of publics and communities. Firstly, while environmental policy often talks in general terms and evokes collectives through language such as ‘community engagement’ and ‘public participation’, such terms often lack clarity (Eden 2016). Within complex governance arrangements, the ‘public’ can become an “empty signifier[s]...intrinsically ambiguous” and carrying “multiple meanings and empirical referents” (Welsh and Wynne 2013, p. 9). Rather than a homogenous group differentiated by the simple socio-demographic categories often applied in politics—age, gender, class etc— the public is multiple, “highly diverse and complex...vary[ing] by context in time and space” (Eden 2016, p. 1). Likewise, communities, particularly in rural contexts, are misconstrued as culturally static and socially homogenous, rather than replete with diversity, conflicting identities and networked relations (see Bell 1994; Macnaghten and Urry 1998; Murdoch et al. 2003). Multiple environmental publics and communities, Eden (2016) argues, are distinguishable through their ‘environmental practices’ and the distinct material-semiotic associations through which they are formed. Importantly, these performative routines and habits are reflexive and changeable, meaning “different worlds come into being and environmental publics themselves are re-made, re-imagined and re-constituted”, as does their environmental engagement (Eden 2016, p. 4). These multiple and transient practices inform a multiplicity of nature(s), environment(s) and, by association, wildlife (Macnaghten and Urry 1998; Hinchliffe 2007; Lorimer 2015).

This complexity of publics, communities and the promise of participation makes multi-actor governance challenging to justly enact. It is also performative, both contributing and responding to social-ecological conflicts and risk politics in

multifarious ways. Firstly, and continuing the point above, Irwin (2006) suggests vague conceptions of collectives contribute to policy rhetoric promoting the “pursuit of public consensus” (p. 315) when this is both unachievable and undesirable within contemporary life. Similarly, the “*flexible construction* of public talk” (ibid, p. 314, emphasis in original) and the fact some actors always have “control over the framework” (p. 316) that defines key terms such as consultation, dialogue and engagement mean these are flexibly interpreted and embedded with power inequalities specific to the political context.

The desire, or its façade, for consensus relates to classical frames of public participation and deliberation (Callon 1999). These are often steeped in the belief that governance controversies can be related, firstly, to public ‘knowledge deficits’ (the ‘Public Education Model’); secondly, to public ‘distrust’ of expertise and authorities; and, thirdly, to a ‘lack of representation’ (the ‘Public debate model’), each of which decision-makers tend to address through an emphasis on better education, engagement, transparency and openness (see also Irwin 2001; Irwin 2006). These, Callon (1999) suggests, perpetuate both boundaries and hierarchies between expert and lay knowledges, whether through complete exclusion or partial negotiation.

However, whilst tensions emerge when collectives are simplified and homogenised, they might also be apparent when governing partnerships ‘do’ recognise difference and heterogeneity. This is because imaginaries of what publics are and how they think or behave are frequently prevalent (Welsh and Wynne 2013). For example, political controversies, including those relating to science and bound up in biosecurity and conservation matters, are frequently reduced to narratives that reduce knowledges to oppositional epistemologies produced either by experts, such as scientists, and lay people (Wynne 1992; Wynne 1996; Eden 1998). These might oversimplify publics into groups that wholly approve or disapprove of official (scientific) discourse, thus ignoring the fluidity of knowledges bound up in people’s

worldviews, as well as their complex range of affective and emotional responses, such as ambivalence, frustration, alienation and resignation (Welsh and Wynne 2013).

Furthermore, these imagined binary publics might be constructed as either positive- useful, responsible and representative- and thus included in partnerships; or else negative- disruptive, irrational, extreme and self-interested- and consequently excluded from debates (Irwin 2006; Eden 2016). These issues highlight an important paradox surrounding the performativity of governance regimes, namely, that they can foster a discourse of inclusion and dialogue in decision-making, whilst simultaneously ostracising certain collectives that appear threatening and non-compliant with hegemonic politics (Welsh and Wynne 2013). These 'bad publics', for example, might be those that question the "(I)institutional blindness to the tacit normative contents of science" (ibid, p. 542) and other accepted expert knowledges, and are thus perceived to act as "incipient threats" to governance (ibid, p. 552). This relates to a further common oversight by decision-makers that, much like knowledge fluidities, publics too are fluid (Eden 2016). This means mobilised publics and social movements, whether portrayed as good or bad, are not distinct from silent, immobilised majorities, but are interwoven within them, problematising the ways in which participation, inclusion and exclusion are enacted.



This subsection provides an overview of literature which is important to help understand the ways in which feral bo(a)rderlands might be arranged politically, and the possible issues that might arise in relation to strategies of governing (re)introduced boar.

#### **4.6 Researching feral bo(a)rderlands**

Feral bo(a)rderlands are points of friction, uncertainty, negotiation and difference. They are, potentially, unsettling and disconcerting. Literature has shown how boar have been closely interrelated with humans historically, monstrous companions whose relationship has churned and flowed, sped and slowed, distanced and neared in different ways through multiple locations. Contemporary relations beyond the UK appear increasingly fraught as human-boar lives have come closer together through a variety of embodied and topological arrangements replete with uncertainties, encounters and circulations of unruly, commensal lives. Living with boar, it seems, is not about knowing there are animals 'out there', but negotiating their presence 'in here', perhaps at proximity. As chapter 2 suggested, boar and their relations often appear monstrous, but what about in the UK where they have only recently appeared?

This thesis seeks to address several gaps in literature, particularly the lack of in-depth, qualitative research into both boar and rewilding. Firstly, though some work has touched on the risks of living with boar, there is very little that pays attention to the materialities of sharing space and living with boar on a quotidian basis. Beyond statistics and decontextualised accounts of potential risks and encounters, it is important to understand how different lives come together, in what kind of circumstances, and with what affective dimensions? Understanding this requires an attentiveness to the mobilities and behaviours of not only boar, but also the other lives, materials and things with which they co-produce space- plants, animals, soils, humans, vehicles etc- and coalesce together as meaning embedded places. Furthermore, this also involves drawing out the temporal relations of place, as discussed in subsection 4.1, a critical yet under-discussed facet of human-nonhuman relations.

Secondly, this thesis is interested in exploring the practices of science and the role it plays in monitoring, surveying and regulating boar. However, whilst this contributes

to the literature cited in subsection 4.2, to date there is virtually no critical work that considers how such practices emerge and evolve in relation to (re)introduced (feral) species. It is important to understand the kinds of socio-technological assemblages that are required as new lives emerge and need to be made known or regulated, and how various logics are applied according to evolving understandings of risk and threat? Unpacking the ways in which these processes occur can help better understand how ontologies of rewilding and biosecurity interact with the contingencies of field science and management, especially when their subjects are not well known nor easily traceable.

Finally, the thesis is interested in the ways in which policy and publics emerge and are practised in the context of awkward species. The case of boar offers an opportunity to understand how different and diverse actors, sometimes with historically and culturally embedded relations, are gathered by unexpected events and required to govern and enact policy. Importantly, such matters are interwoven with issues surrounding the multiple spatio-temporal choreographies, mobilities, (b)orders and boundaries that make up worlds. Furthermore, these issues encourage ontological questions relating to belonging: who or what belongs; where and how might things belong; and who decides? Such questions relate more broadly to ones of political inclusion and exclusion, for humans and nonhumans alike. These are prescient questions critical to rewilding, both in and out of practice, and need to be situated within specific situations, places and landscapes.



This chapter has introduced some of the key literature that helps consider the feral rewilding of unofficially (re)introduced boar in the UK. Furthermore, it has set up the theoretical and conceptual framework for what I have called ‘feral bo(a)rderlands’ and the main structure through which my empirical chapters are arranged to address my research questions.

## FERAL METHODOLOGY

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### 5.1 Introduction

The previous chapters used a range of literature to identify key themes running through UK bo(a)rderlands. Here, I turn to the methodological approach I followed to draw these out. As outlined previously, there is a paucity of qualitative social research looking at the everyday realities of living with and governing (re)introduced boar, and rewilding more broadly. This chapter, therefore, introduces what I think of as a ‘feral methodology’, a term that reflects the uncertainty of boar presence, my position as a researcher, as well as the process of multispecies research more generally. Ferality is about liminality, being ‘betwixt and between’, and blurring boundaries and categories. It enacts borderlands, often generating different sets of relations- some convivial, some tense and awkward. Understanding research in this way, therefore, helps foreground its messy and contingent nature. The chapter first addresses my decision to undertake an ethnography, before then introducing and expanding on its location in the Forest of Dean. I then discuss the various methods I employed, before finally reflecting on some of the issues surrounding my positionality.

### 5.2 Mess and method

#### 5.2.1 Choosing ethnography

Methods are political and reflect ontological and epistemological outlooks (Taylor 2012). With this in mind, rather than trying to know and simplify the world, this research was grounded in a belief that realities are messy and indeterminate, too textured to fully capture, comprehend, witness and articulate (Law and Mol 2002). To be sensitive to such uncertainties, my research sought to foreground the

complexity of feral rewilding. This meant carrying out a methodology that would not only attend to discourse around boar, but also their embodied and material more-than-human relations. UK bo(a)rderlands, after all, are co-constituted of heterogenous lives, practices, places, histories and power relations.

Keen to avoid foreclosure, I undertook an ethnographic methodology, a strategy Lewis and Russell (2011) suggest is inherently reflexive and suited to “deal with complex, fluid contexts and their emergent and unanticipated issues” (p. 409). Rather than assuming the “security of pre-conceived analytic categories” (Nimmo 2011, p113) to uncover an unqualified truth, grounded approaches to ethnography emphasise the discovery of “*inter-subjective truths*” (Crang and Cook 2007, p. 11, emphasis in original). Such an approach required me to be reflexive about concepts of data- what it is, what it means and how it might guide research- leading to a continual, inductive-deductive interplay (Crang and Cook 2007; LeCompte and Schensul 1999). In practice, therefore, my ethnography was a multi-directional and interactive-reactive flow between fieldwork, analysis, categories and concepts (Charmaz 2006; Crang and Cook 2007).

Grounded, ethnographic approaches take many forms and offer opportunities for flexibility and experimentation. In Law's words (2004a) they “open[ing] space for the indefinite...articulat[e] a sense of the world as an unformed but generative flux of forces and relations” (p. 6-7). This felt important for my research, not only ontologically, but because recent empirical research into UK bo(a)rderlands and feral rewilding is relatively sparse. In such circumstances, Jones' (2015) comments on the value of “haphazard [instinctive] method”, seemed apposite, for “following one's nose (as a dog on a scent) is the only way to make real progress...[t]he

systematic soon loses the scent (of life)” (p. 6, parentheses in original)<sup>23</sup>. This chimes with Tsing’s (2012) description of ‘foraging’ as an inclusive and attentive activity that uncovers and nurtures. Such a research process, however, does not mean there is no methodological forethought, however, but that finding what feels appropriate for a given context emerges subjectively, reflexively and is based upon the accumulation of knowledge and experience. Instinctively following scents and foraging, therefore, offered a way, in Ingold’s (2011a) words, to “*follow what is going on, trac[e] the multiple trails of becoming, wherever they lead*” (p. 11, emphasis in original).

### 5.2.2 More-than-human subjects

Finding ways to follow the material and discursive geographies of boar relations and engaging with their “‘real world’ messiness” (Law, 2004a, p. 14), required a novel assemblage of methods. Traditionally, ethnography has centred on the long-standing ‘ideal’ of participant observation, and supplemented this with various field techniques, such as note-taking, interviews and audio-visual recordings (Falzon, 2009, p. 1). However, ethnographic methodologies and techniques have diversified in response to changing theoretical and conceptual interests, including materiality, affect and emotion, interconnectedness and mobility (Sheller and Urry 2006; Falzon 2009; Pink 2009; Vannini 2015).

This is especially important as research has increasingly paid attention to multispecies geographies and their relational agencies. This has guided methodologies that are more “inclusive, troublesome, emergent and messy” (Buller

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<sup>23</sup> Jones reworks this concept from Sebald’s (2007) description of critical writing.

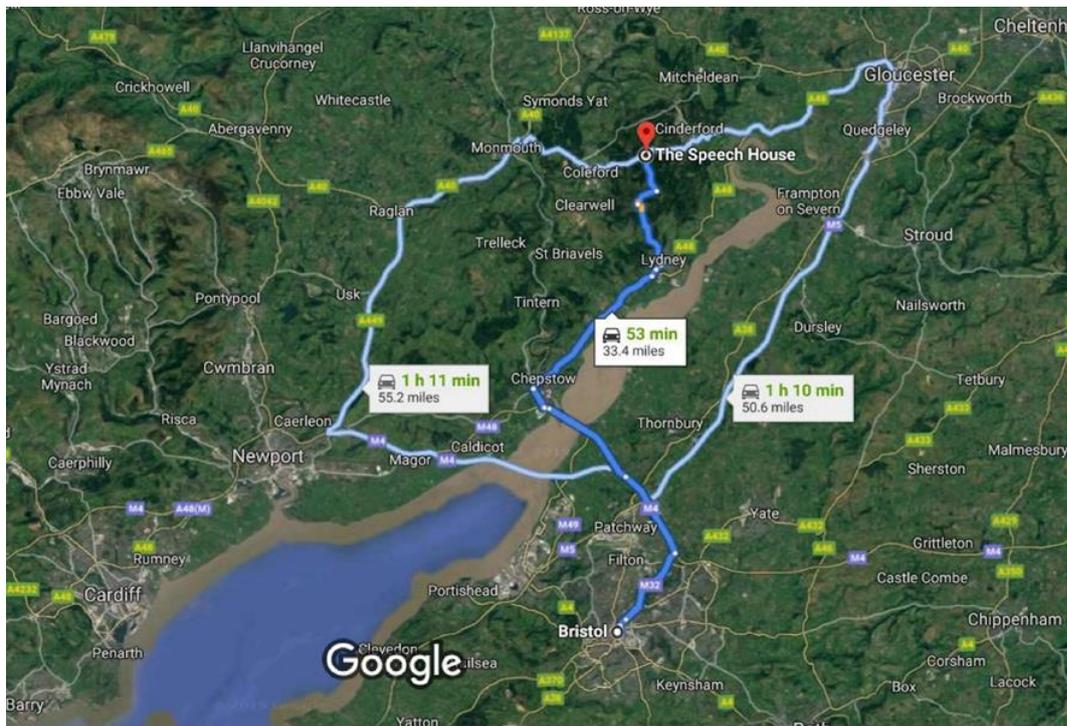
2015, p. 376). For my ethnography, I intended to explore the tensions between 'boar spaces' and 'boar places', to paraphrase Philo and Wilbert (2000a). Whilst research into the spacing and ordering of animals has garnered attention, less has been paid to the lived realities, lively geographies and place-making of animals (Buller 2015; Hodgetts and Lorimer 2015; Barua and Sinha 2017). Such historical neglect has been due to a range of ontological, epistemological and methodological challenges. Recent years, however, have seen a growth in multispecies work suggesting innovative ways of attending to more-than-human worlds (see Buller 2015; Hodgetts and Lorimer 2015; Kirksey and Helmreich 2010; van Dooren et al. 2016; van Dooren and Rose 2016). The motivation behind such work is usually to broaden ethical and political engagements with nonhuman subjects (as opposed to objects), probe categories and orders, and experiment with ways of 'noticing' and being 'attentive' to nonhumans (van Dooren et al. 2016).

Carrying out my ethnography, I sought to contribute to approaches that increasingly inhabit interdisciplinary borderlands by bringing methods from the natural and social sciences together. Numerous studies have deployed ethological observations of companion species (Brown and Dilley 2012; Haraway 2008) and wild ones (Lorimer 2010a; Lorimer 2010c; McKiernan and Instone 2015; Barua and Sinha 2017) in the hope of "afford[ing] a more sustained and material engagement with nonhuman lifeworlds and animal cultures" (Hodgetts and Lorimer 2015 p. 3). Other ethological inspired work has been less encounter focussed and been mediated through archival and political discourse (Lorimer 2006; Dempsey 2010; Garlick 2018). Alternatively, social researchers have also engaged with 'expert' and 'lay' knowledge practices to offer alternative insights into nonhuman worlds (Lorimer 2008; Tsing 2010; Candea 2013a). Whilst acknowledging the genuine difficulty of 'centring' nonhumans (see Hodgetts and Lorimer 2015; Bear et al. 2017), I felt it was important to find ways in which I could provide a livelier and more ethical account of boar worlds.

## 5.3 'The Dean'

### 5.3.1 Entering 'the Dean'

My initial plan was to carry out a 'multi-sited ethnography' (Falzon 2009) focussing on two or three locations where boar are known to be present in the UK. This would have allowed me to follow the topological threads linking separate feral bo(a)rderlands and consider how their constitution varies. However, following Crang and Cook's (2007) suggestion to explore 'the field' early, my intentions quickly changed. I decided to visit the Forest of Dean, the closest location to Cardiff University and Bristol (where I live), to try and 'catch scent' of boar-related happenings.



*Figure 4- Map of my route to the Dean. This was my initial journey, and one I made multiple times throughout my research. Occasionally I took alternative routes. Other times I intended to but found myself absently driving on the same, familiar roads.*

Boar have been present in the core area of the Dean since around 2006 (Stannard 2011). As discussed in Chapter 1, the population is said to have formed from two distinct groups. The first, numbering around 30 individuals, are reported to have

escaped from a farm north of the forest in the late 90s, though people I speak to tell me the farmer went bankrupt and deliberately let them out. The second was a group of 60 'dumped' to the west of the forest, on Forestry Commission land, in 2004 (Stannard 2011). This occurred when there were no longer any known boar farms in the area, and their arrival has remained a mystery, though rumours abound about their origins: another bankrupt farmer; someone perturbed by heightened biosecurity measures post-foot and mouth; or else someone keen on hunting.

Arriving in the forest in winter 2015/16, I almost immediately began to sense their omnipresence. As outlined in Chapter 1, I had encountered boar and their traces before, and in the Dean they were conspicuous. Occasional patches of upturned soil on the verges of the road entering the forest intensified as I drove through the forest proper. At the Speech House car park, just in front of the nose of my van, leaf litter had been disturbed and soil exposed: boar were certainly around. I changed into my boots, picked up a walking guide and wandered, taking photos and nervously approaching several strangers in the forest. The paths were muddy and partially rooted by boar. Explaining my project to two dog walkers, one of them replied rhetorically, "how long have you got?". Later, I spoke to another walker who tells me, "the boar are a problem, but so are many things...the sheep...the poaching...the politicians are useless. Not just about the boar around here!". These and other conversations underlined the messy situation. Boar, quite literally, were messy creatures with visible traces, though they were also elusive. Though I didn't see any as I walked around on this recce, their mention appeared to evoke an admixture of feelings, generating both affective responses and ambivalence. It also seemed they could not be easily separated from other local matters, concerns and practices. Boar politics in the Dean seemed too complex to only briefly confront.

This was further reflected in news stories I had been following leading up to and from the commencement of my PhD, an indirect way of tracking the tensions of the

Dean at a distance. Various national and local papers reported stories about the current status of Forestry Commission management practices<sup>24</sup>; “ruined lawns” caused by “feral pigs”<sup>25</sup>; residents reduced to clearing “the mess” caused by boar<sup>26</sup> because the Forestry Commission were “‘ignoring’ boar damage”<sup>27</sup>; and poachers nailing a boar’s head to a tree<sup>28</sup>. The comment sections of two local papers, *The Forester* and *Forest of Dean and Wye Valley Review*, also regularly circulated the feelings of people who liked and loathed boar, or else found fault with local authorities and governing agencies. These were often heated, emotional and spoke of affective boar experiences. The place and politics of the Dean appeared, in some ways, to be feral like its new inhabitants.



An essential aspect of ethnographic accounts is, in Willis and Trondman's (2002) words, to follow the uniqueness of ordinary, embodied practices and their “‘[t]hiss-ness’ and ‘lived-out-ness’” (p. 394). This connects intimate experiences to wider patterns, forms, discourses, practices and histories which performatively create the uncertain “eddies and the gathering flows” understood as the social (ibid p. 395).

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<sup>24</sup> “Wild boar numbers on the rise despite cull in the Forest of Dean”, *The Guardian*, 24/07/2015, <https://www.theguardian.com/environment/2015/jul/24/wild-boar-numbers-rise-despite-cull-forest-of-dean>

“Boar cull ‘on target’”, *Forest of Dean and Wye Valley Review*, 14/01/2016, <http://www.theforestreview.co.uk/article.cfm?id=101635&headline=Boar%20cull%20%E2%80%98on%20target%E2%80%99&sectionIs=news&searchyear=2016>

<sup>25</sup> “Wild boar rip up a manicured hospital lawn”, *The Daily Express*, 04/11/2015, <https://www.express.co.uk/news/nature/617020/Wild-boar-manicured-lawn-hospital-uk-news>

<sup>26</sup> “John cleans up”, *Forest of Dean and Wye Valley Review*, 12/02/2016, <http://www.theforestreview.co.uk/article.cfm?id=101754&headline=John%20cleans%20up&sectionIs=news&searchyear=2016>

<sup>27</sup> “Forestry ‘ignoring’ boar damage”, *Forest of Dean and Wye Valley Review*, 04/11/2015, <http://www.theforestreview.co.uk/article.cfm?id=101279&headline=Forestry%20%E2%80%98ignoring%E2%80%99%20boar%20damage&sectionIs=news&searchyear=2015>

<sup>28</sup> “Boar’s head nailed to a tree”, *Forest of Dean and Wye Valley Review*, 30/09/2016, <http://www.theforestreview.co.uk/article.cfm?id=753&headline=Boar%20%E2%80%99s%20head%20nailed%20to%20a%20tree&sectionIs=news&searchyear=2015>

My infant sense of the Dean and its entangled politics made multi-sited fieldwork seem too broad. It made sense for me to stay put, spread roots and inhabit the Dean. This, however, was not motivated by a belief that spending prolonged time in the Dean would impart a single truth about feral rewilding ‘out there’ (see O’Reilly 2005; Candea 2007; Falzon 2009). Rather, it was a decision based on pragmatic, logistical and ethical factors. Firstly, I wanted to address the lack of textured, qualitative research that engages with the material, quotidian co-becomings of (re)introduced species, something which would take time. Secondly, I was keen to explore ways of getting to know boar and their relations. The Dean, where boar have the largest and most visible presence, seemed to offer the most immediate possibility to do so.

Deciding that my fieldwork would predominantly take place in the Dean was, therefore, a way of making “a framing cut out of a seamless reality” (Candea 2007, p. 171). In other words, I would generate some necessary boundaries to help emplace my research and partially reduce the ‘tyranny’ of choosing fieldwork locations. Importantly, however, these field boundaries needed to be porous and ambiguous (Dewsbury and Naylor 2002). They would not preclude me from tracking relations further afield as data emerged, events unfolded, and opportunities arose. Indeed, though my main observational fieldwork would centre around the Dean, my research was multi-sited insofar as I understood the ‘field site’ to be more than just a single geographical co-ordinate, and more a process or gathering (Candea 2013b). Keeping boundaries fluid was vital to understand these fluid bo(a)rderlands.

### **5.3.2 Placing ‘the Dean’**

So far, I have talked of the Dean and shown where it is, but I haven’t really said ‘what’ it is. This is difficult for the Dean is, like all places, multiple. Not only its cultural, physical and moral landscape, but also its geographical boundaries (see

Figure 5). As I began to spend time there, from autumn 2016, I was confused by people using the term in a flexible way.

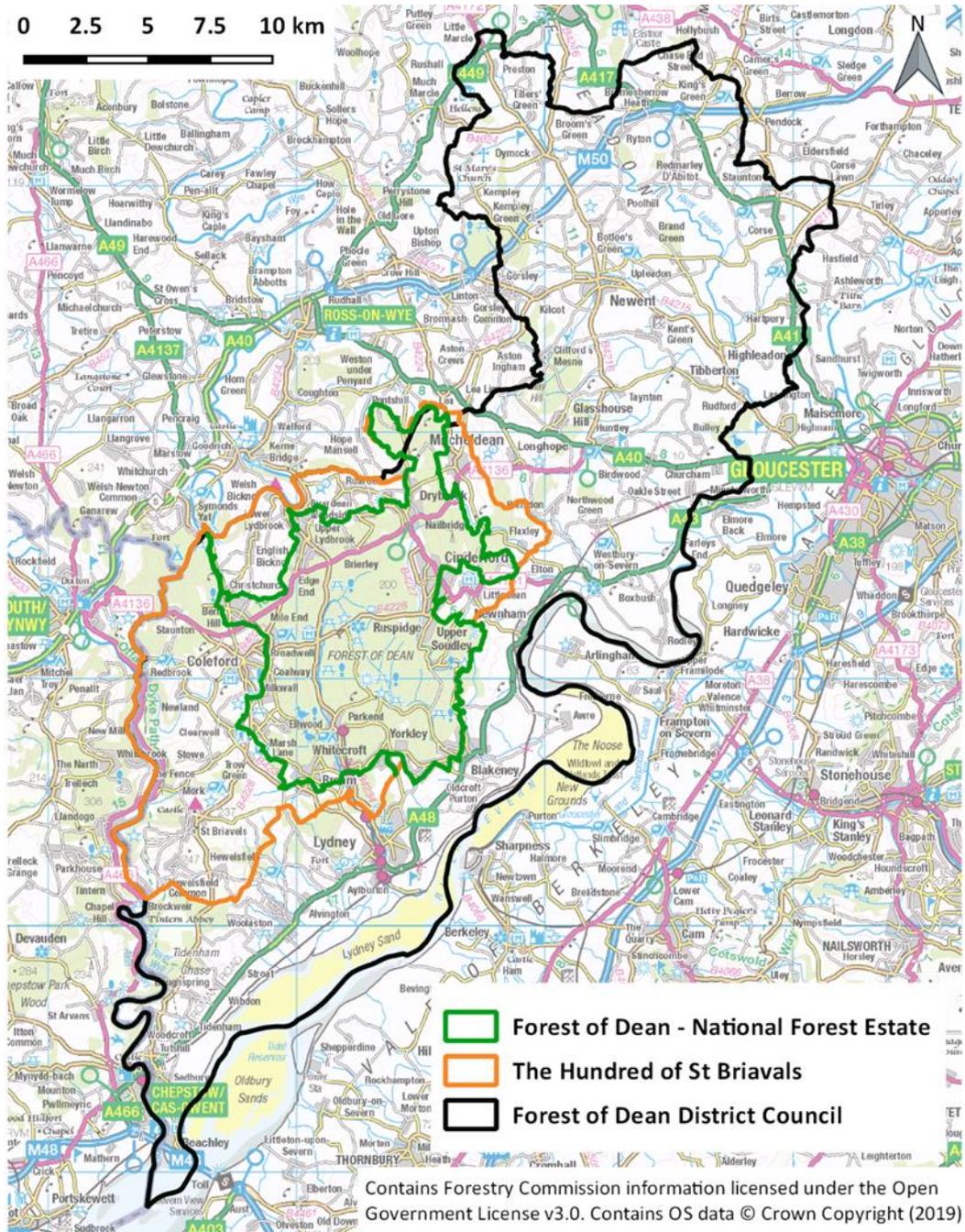


Figure 5- Map depicting the different boundaries of the Forest of Dean

Firstly, at its broadest, it refers to the local District Council demarcations which includes low-lying, marshy agricultural land in the Severn vale to the south; the higher altitude woodland managed by the Forestry Commission in the centre; and

more fertile agricultural land to the north. Generally speaking, this closely follows the administrative boundaries established in Norman times when the region was first designated as a 'Royal Forest' (Forestry Commission 2014). The term 'forest', it is important to note, is also ambiguous. Historically, it did not equate to woodland but, rather, was a "legal region" where a monarch had the right to keep deer and make "[f]orest laws" (Rackham 2000, p. 234). They were not just areas of woodland or wood-pasture, but also heathland, moorland and grassland. Accordingly, Rackham suggests they would be better understood as "place[s] of deer rather than of trees" (ibid, p. 62). This historic understanding, however, faded through the 17<sup>th</sup>-19<sup>th</sup> centuries as plantations became increasingly valuable for industry and war, the value and presence of deer diminished, and 'forests' became more ecologically homogenous.

Another, more commonly referenced geography is the 'Hundred of St.Briavels', referring to a collection of parishes historically clustered and bound together during Norman administration in the 12<sup>th</sup> Century (Forestry Commission 2014). It has a much smaller geography than the District Council and mostly covers the higher plateau between the Severn and Wye rivers. The Hundred was overseen by 'Forest Verderers', judicial officers who protected the rights of the King and governed the local inhabitants who were given common rights<sup>29</sup>. It is suggested this area is "more commonly understood as the Forest of Dean by the local community" and chimes most with the "cultural and natural heritage of the area" (ibid, p. 5). This boundary seems to reflect commonplace, local understandings of the Dean. Its contemporary

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<sup>29</sup> The Verderers are still present today and hold court regularly in Speech House. Their contemporary role is mostly symbolic, but they are still perceived as having a moral authority and voice. Occasionally, they become involved in political matters related to the forest, mostly through carefully worded press releases. The Forestry Commission Deputy Surveyor attends meetings to inform them of management, and the Verderers are still required to ratify certain legal matters.

significance is still high as those born in 'the hundred' are understood as 'foresters' and have rights to 'free-mine' and common livestock, declining though still persistent activities seen as integral to the Dean's cultural character (Hands off our Forest 2011). This identity is a common way through which many residents of the Dean establish belonging and local knowledge, a point regularly evoked during conversations in the field.

A final, crucial geography subsumed by the above regions is the 'Statutory Forest of Dean', the area predominantly managed by the Forestry Commission (FC) since 1919 and, in many regards, the one that fits the external imaginary of the Dean. The geographical history of this area is too messy to detail thoroughly, with numerous legal Acts and decrees enacted over the last 500-1000 years<sup>30</sup>. A useful place to start, however, is the 1600s, when the financially depleted Crown began a programme reforming Royal Forests to generate additional income by enclosing much of the land, increasing the production of geological and woodland resources, and selling tracts off to private landowners. Over the following couple of centuries, the Dean became increasingly deforested as timber was both exported out, or else used to fuel the now burgeoning mines, quarries, iron and charcoal smelts. Despite the enclosures, however, the population in the Dean had increased as forest laws were ignored by authorities and people moved in to settle in illegal dwellings and work the industry. Sporadic riots were sparked and quelled when authorities did seek to enforce enclosures, leading to Parliament to intervene in land sales.

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<sup>30</sup> I summarise several books by local authors, and reports which tend to reference them. Accounts by Nicholls (1858), Nisbet (1906) and Hart (1971) meticulously outline Dean history. Documents published by government agencies and campaign groups detail these and additionally describe the Dean's 'character'. See The Countryside Agency (2005), Small and Stoertz (2006), Hands off our Forest (2011), Forestry Commission (2014).

By 1802, with much of the Dean by now deforested, Lord Nelson recommended the Crown undertake a large-scale afforestation project to provide timber, mostly oak, for Navy ship-building, leading to the Dean Forest (Timber) Act in 1808. Over the following couple of decades much of what is now the current statutory forest was enclosed, once again stirring a series of riots in 1831 when locals destroyed many of the fences and walls which had excluded them from where they had been squatting and grazing sheep through their common rights. These riots, the leaders of which were convicted and sent to Australia, led to the Dean Forest Act of 1831, ordering the permanent demarcation of the forest boundaries and outlining the rights of local foresters.

The current statutory forest is textured with these histories and they contribute to a rich, multifaceted cultural landscape. A core woodland is ringed with a haphazard spattering of dwellings and towns, some of which thread along roads inside. The large-scale industry that steadily built up through the 19<sup>th</sup> Century and provided labour in collieries and ironworks declined and slowly disappeared in the 20<sup>th</sup> Century. This left the Dean deprived economically and with high levels of unemployment that persist to this day. Here and there, a few quarries are still licenced to operate, leaving large geological scars where they dig out Carboniferous Pennant Stone. Likewise, some small freemines still function, ramshackle set-ups built from corrugated iron and girders that persist more for cultural importance than economic gain. Otherwise, this history remains through formally recognised 'industrial heritage'; crumbling bridges, railway tunnels and smelts; or strange geological topographies now overgrown and rewilded by nonhuman life.

As well as the dynamic industrial history, the Dean has fluxed ecologically. As noted, its past has been pocked by periods of intense deforestation and afforestation and it has been managed for commercial forestry for centuries. Currently, it is a patchwork of semi-mature broadleaf stands of oak and beech, interspersed with

dense plantations of spruce and fir planted by the Forestry Commission in the years since World War II and managed on rotation. In steeper stream troughs and gulleys, shrubs and smaller tree species grow in a less orderly and more haphazard fashion. Though there are some patches of woodland encircled by stock fencing to exclude deer, the forest is otherwise open, engendering a close entanglement of settlements and woodland, and ambiguous boundaries between human-nonhuman space.

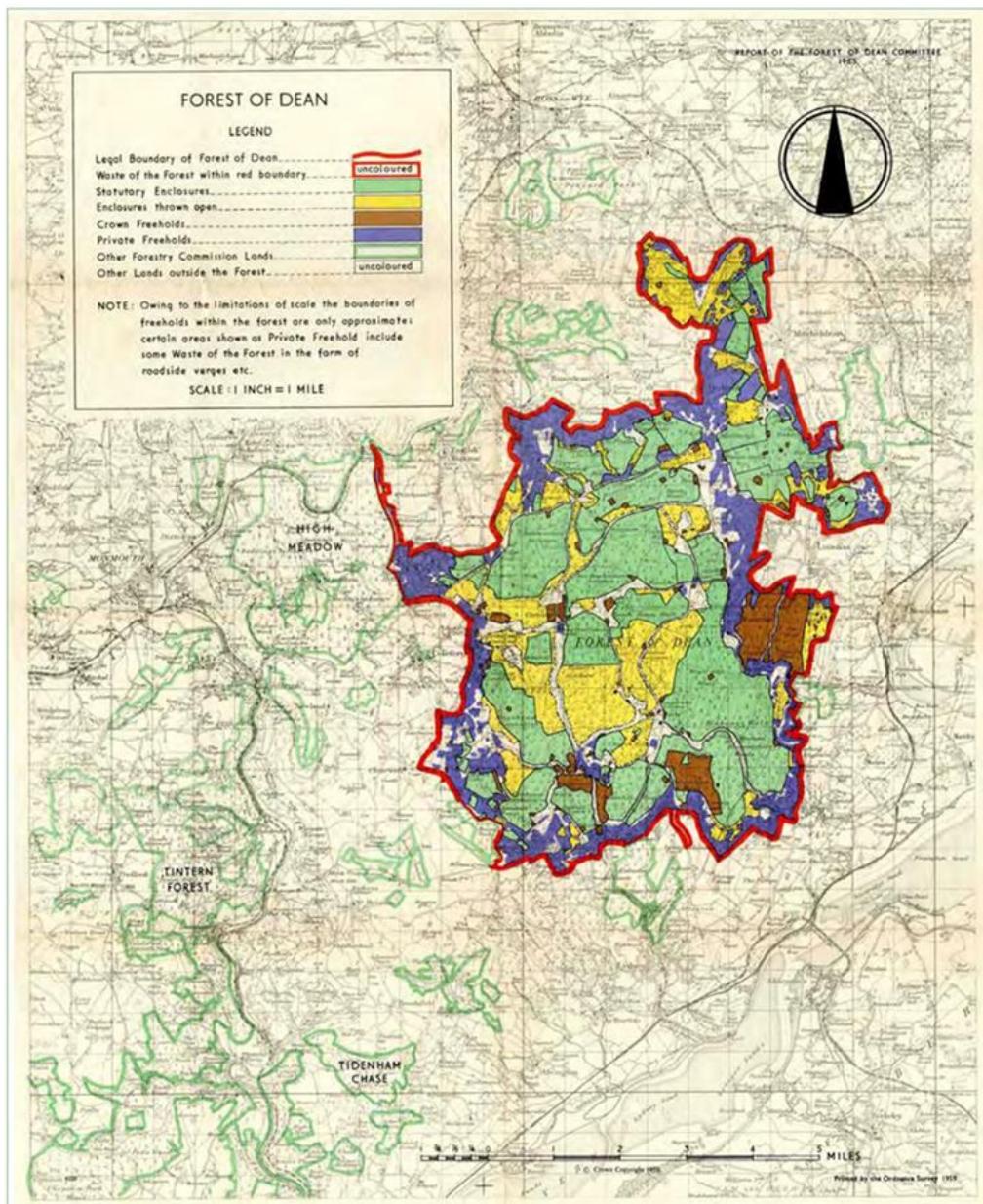


Figure 6- Map of the Statutory Forest from 1958. It is interesting as it shows the locations of forest waste between Forestry Commission enclosures. (From *Hands of our Forest*, 2011)

This is further blurred by the areas of ‘forest waste’- the land outside the historic enclosures- that edge settlements and roads, creating liminal grassland and scrub zones historically grazed by sheep (see Figure 6). The legacy of sheep in the forest comes from the settlers several hundred years ago who were given common rights by the Forest Verderers. These rights still persist, as do a handful of ‘badgers’<sup>31</sup> who exercise this right to herd and heft and continue, as with the freeminers, an important practice of the cultural landscape. The sheep roam freely, feeding in amongst the tree stands; walking along and sleeping in roads; depositing droppings on pavements; and nibbling grasses and flowers on verges and in gardens. Their current numbers, however, are far less than prior to the 2001 Foot and Mouth crisis, when 6-8000 animals were transported to the central forest and burnt in pyres, an event that is still etched in the memory of many locals. The sheep were seen as fundamental actant in the Dean ecology, maintaining grasslands and embodying its multispecies identity.



Part of the Dean’s identity is forged in what would once have been its relatively isolated geographical location situated between the Rivers Wye and Severn. It is a geographic borderland, something that has helped consolidate a relatively distinct cultural identity. However, like any cultural landscape, the Dean, it seems, is constantly in tension and transition (Wylie 2007). Its contemporary territories, aesthetics and social-politics are the continuation of its dynamic history and the living and dying legacies of hunting, industry, forestry and farming. It is into this complex and emergent landscape that, firstly, boar (re)appeared, and, secondly, I arrived.

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<sup>31</sup> A ‘badger’ is the local name for the men who keep and graze sheep in the Dean.



*Figure 7- Series of photos from the Dean showing (clockwise from top left) forest sheep; a freemine; a view looking east over the Severn Vale; and a view from New Fancy in the centre of the forest.*

### **5.3.3 Revealing ‘the Dean’**

Here is a good place to comment on terminology, anonymity and ethics. Crang and Cook (2007) describe the latter as twofold. Firstly, they are the “broad and fixed principles” (p. 31) that shape proposals and plans, such as those I was required to outline in the ‘Ethical Approval Form’ I submitted to the ‘School Ethics Committee’ prior to commencing research. Secondly, there are “messier, ongoing, impure” (ibid, p. 32) ethics that are continually updated and emerge through research, often requiring decisions that are uncertain or flexible. One of these was how I would refer to locations and participants. Throughout Chapters 6-9, I commonly use two terms, ‘the forest’ and ‘the Dean’, in ways that reflect their general usage by participants. When I use the former, it is to reference the woodland, grassland and

heathland areas that might commonly be understood as ‘natural’. On the other hand, I use the Dean more broadly to refer to the wider landscape entangling ‘the forest’, the surrounding settlements and land beyond. The Dean is interpreted fluidly, though generally something akin to the “Hundred of St.Briavels” (outlined in Figure 5). Rarely do I refer to the larger District Council region, unless discussing local politics.

Ethnographic research is rightfully cautious about revealing the locality and participants of studies (see Bell 1994). Research is “inherently political” (Crang and Cook 2007, p. 26) and bound up in issues relating to power and knowledge, the effects of which might have profound implications on communities, places, participants (whether human or nonhuman) and researchers. ‘Masking’ by using pseudonyms is a common practice to protect identities and ensure that research does not have harmful results (Jerolmack and Murphy 2017). However, regarding ‘the Dean’, for several reasons it seemed unnecessary and undesirable to use a locational pseudonym to conceal this broader site of research. Firstly, an increasing national interest in the political debates surrounding boar and the visceral nature of these would preclude any genuine attempt to mask location. Relatedly, my interest was not just boar, but also the ways their (re)introduction might have altered pre-existing relationships with place. Therefore, the continual rhythms and spatial-temporalities of lives, practices and policies that co-constitute the Dean are not merely a ‘hinterland’ (Law 2004) but a critical aspect of my study. Anonymising this would potentially lead to “a slippery slope” of “reifying” the Dean as an “ideal type[s]” (Jerolmack and Murphy 2017, p. 3), which is certainly not the intention.

That said, the affective nature of boar politics, particularly those in the Dean, does bring up genuine issues regarding individual and group confidentiality, as well as specific forest locations. This was highlighted from the outset as I learnt about practices and events through press and participant’s stories. For example, I heard of the FC stealthily carrying out management and monitoring; masked ‘sabs’

disturbing FC rangers and damaging forestry infrastructure; prominent locals having boar heads left on their doorsteps; boar being poached or illegally hunted by dogs; residents falling out with neighbours over bad practices and differing attitudes; anonymous reports to police about illegal activities and threats. For this reason, I decided to be selectively vague about how I referred to places in and around the forest, employing a flexible logic that also took my responsibilities towards, and the desires of my participants into account.

## 5.4 **Foraging**

*I have never figured it out...when you are tracking them, and you see where the boar have been snouting along, foraging, rooting here and there, just a little bit...and there are a few footprints, some clues...you think, 'this might be interesting'. And then, 'wow', you arrive at an area where it has all been going on...The soil is rooted deep, everything is exposed, like an explosion...and you think, what is it, here, that is so special, so interesting? (Neil, resident)*

Having introduced the Dean, here I describe the methods as used as I was 'foraging' for data. Due to the messy nature of research, these overlapped or else spawned from one another depending upon success, failure or instinct. My foraging took time, fitting Law's (2004a) suggestion that social research needs methods that are "slow, vulnerable, quiet, multiple, modest, uncertain and diverse" (p. 11). Relatedly, my slow research was an attempt to be "care-full" by "tinkering...to find the best way forward" (John Law and Singleton, 2013, p. 4).

### 5.4.1 **Inhabiting my 'patch'**

*I go all over the forest, but I guess I have my own patch. Most people do....Usually an area not far from the house, sometimes further, that you are familiar with...You know the trees, the paths, the animals, the other*

*people who might come and go...where you get to know things properly...you get protective. (Neil, resident)*

I decided to move to the Dean in autumn 2016. Participant observation is regarded as the core ethnographic method of ethnography and living in the Dean and inhabiting 'a patch' was key to what Geertz (1998) calls 'deep hanging out'. I viewed a couple of rooms advertised online before plumping for one in an old cottage in a village on the edge of the forest. Living here, I hoped, would help me cultivate a 'sense of place', not in the misguided belief I would know what locals feel, but one specific to my own subjective presence in the Dean. As Tsing (2012) explains, foraging is about learning "familiar places" (p. 2). If places and their meanings are relational and emerge through habits and movements, as described in chapter 4, I needed to establish my own routines and rhythms. Some of these were in 'my patch', others spread more diffusely through the Dean. I frequented local shops, occasionally pubs, sometimes volunteered for a conservation work group and attended the odd evening talk. I also walked, went running, cycling and drove around the forest, initiating encounters and getting a sense of its rhythms. Talking, reading and observing allowed me to keep an eye on local happenings, uncover social networks and relations, and experience different modes of being, doing and understanding in the forest (see Figure 8).



Figure 8- My growing archive of news clippings from during fieldwork

I primarily chose the cottage as it was a minute from a footpath leading into the woods, whilst it also seemed well-connected to get around the Dean. It appeared a good spot, something confirmed early when talking to some conservation volunteers, one of whom told me, “you’ll be in the thick of it there...one of our group lives that way and sees the boar all the time”.



Figure 9- Boar digging minutes from my house

Amongst the motivations for moving to the Dean was to experience how boar rhythms and their relations fluxed and flowed. Not only did I sense this early on through their traces around the cottage (see Figure 9), I quickly began encountering them first-hand in the forest:

*Out for a run from the cottage early evening, 5.30pm-ish. I met a falconer and his wife flying a raptor- a Harris Hawk (I actually recognised it!)...They mentioned they had seen 'a really large boar' up the track...I carried on running, presuming the boar had long gone. Perhaps a minute or two later, I suddenly disturbed a whole sounder! I heard them before I saw them, one big grunt suddenly focusing my eyes. I looked up ahead and saw three rumps disappearing up a small slope into some conifers. Then I noticed a larger boar- a mother?- disappearing into a fringe of longer grass and bracken, ahead to my left. Time paused. Just as I took a couple of seconds to process what had happened, close to my right another boar- the largest of the group- suddenly grunted and crashed off through some nettles into boggy soil and birch...I waited for a while, standing in silence, before my body began to feel the chill of air as adrenalin subsided. I don't*

*know what I was feeling- excitement, nervousness or fear. (Fieldnote, 25/10/2016)*

My ethnographic approach was deliberately open as I was unsure what data might emerge. Living on the edge of the forest, I hoped, was one way that I could begin to develop a sense of the complexity of cohabiting with boar. Whilst I had imagined some encounters, such as the one above, would happen, I also experienced unanticipated, affective experiences that helped me make emotional connections to the stories of other residents.

*A warm, summer's evening- 9pm...I just heard the crack of a rifle, perhaps from near the village down the road? I'm still listening...another shot!...more like rifles than shotguns...At this time of the night you shouldn't really be hearing rifles. The FC say they don't shoot at night. Perhaps private land? Or poaching? Many people say it happens near them- it seems likely. I think any private shooting would be too far away. (Fieldnote, 01/08/2017)*

*3.57pm...Two nights ago, I was metres away from a sounder that strolled out in front of my car...Just now, driving home and thinking about that moment and other dead boar...I literally just drove past a really bloated, rotund boar lying on its side by the road, legs outstretched, dead...this road is lethal- sharp curves, cars and trucks driving like mad. And the forest suddenly stops next to the road- there is virtually no verge, so animals appear from nowhere. (Fieldnote, 20/07/2017)*



My movements to and from the cottage bred familiarity with 'my patch', as well as other routes that regularly took me further afield. These 'journeys' helped make the Dean a meaningful personal place and 'field site', establishing an engagement between myself and my environment (Lee and Ingold 2006). Over time, I learned where forest sheep slept on the roads; who might be in a local pub; what the thoughts of the post office owner might be regarding news; where people drove

recklessly; or which dogs paired with which owners. However, my key tool was walking. As I moved around, I increasingly formed a topological map based on encounters with its various inhabitants- boar, fallow deer, buzzards, ravens, jays, blackbirds, squirrels and sheep. I became familiar with dense stands of spruce, mixed patches of oak and birch saplings, the slopes and undulations of paths and tracks and the ground where bluebells grew and died. It also brought me into contact with people- walkers, dog walkers, horse riders, cyclists, photographers, forestry officers, contractors and more. Walking was inherently social. And as Lee and Ingold (2006) have suggested, it brought a 'double awareness', allowing me to both 'attune' outwards to my surroundings and inwards to my "realm of thoughts and self" (p. 72). It not only helped me become more attentive to the multi-sensory, multi-cultural and multi-species Dean around me, but also reflect on my fieldwork, thesis and, more generally, life. It was a method of data collection, analysis and theory.

Rhythms and routes are performative, both creating places and, in turn, being created by them. Repetitive movements form thicker associations with the same piece of ground and its surroundings (Ingold 2000; Lee and Ingold 2006; Lorimer 2006), whilst revealing the temporality of landscapes, the dynamic lives of animate beings and the transience of the elements (Merriman et al. 2008; Edensor 2010b; Crang 2012). Keen to inhabit more of the forest and the presence of boar beyond my patch, I formulated a plan to carry out experiential 'transects'. In other words, regularly undertaking repeatable walks and making notes on the spatial diversity of the forest and its transience<sup>32</sup>.

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<sup>32</sup> see Figure 18, subsection 5.4.4, for a map of transects alongside go-alongs. Putting these together gives an indication of how they related to one another spatially.

I settled on five circular walks, spread around the forest. These took between 1.5-3 hours and were of varying distances. I initially eyed up possible routes by choosing a car park or layby on an Ordnance Survey map and considered whether there was a reasonable loop to be made. The intention was to undertake each walk 3-4 times to feel seasonal forest changes away from my patch. This, however, proved unfeasible and, in the end, they were repeated 2-3 times. These transects were productive and brought multiple encounters with people, some of which led to subsequent interviews (as discussed in section 5.4.4). Furthermore, I also encountered boar away from my patch- different individuals, matriarchal sounders and groups. I noticed the seasonal transience of the forest: boar disturbance regenerating with thistles and bluebells; sloppy paths hardening and drying; leaves sprouting and falling; walkers changing from down jackets to t-shirts; forestry operations starting and ceasing. Furthermore, my sensibility towards Dean textures grew as I found abandoned quarries and industrial sites regenerating with vegetation, old military structures from WWII, ancient oak trees and memorial benches.

Retrospectively, however, fixing transects in such a way was unnecessary. If I hadn't moved to the cottage and was visiting the Dean, they could have been a useful technique. However, because my other methods were relatively fluid and instinctive, this approach felt uncomfortably contrived. Rather than following my nose, this was an unnecessarily prescribed attempt at place-making. Firstly, I would never know other parts of the forest as well as my own patch which I explored regularly and, secondly, I was journeying around the forest anyway, making these fixed routes feel redundant. Finally, and leading on to the following subsection, the more animal runs and tracks I saw leading into vegetation, the less interesting it became to follow fixed, human-trodden routes. Boar had consumed me more than I thought they might, and the possibility of discovering their 'places' became harder to resist.

## 5.4.2 Tracking and Trapping

Living in the Dean brought unanticipated boar encounters and familiarity with the rhythms of their behaviour. But as I journeyed the forest grid- its footpaths, forestry tracks and roads- a less formal, more-than-human network of tracks and desire lines became apparent. Footprints leave impressions and bodies bend and brush vegetation, revealing landscapes as temporal and spatial textures of movement (Ingold and Vergunst 2008). These trails offered a way to track boar, observe them and learn about their places and mobilities (Hodgetts and Lorimer 2015; Hodgetts and Lorimer 2018)<sup>33</sup>. Tracking in my patch and “learning by witnessing” (Lorimer 2010a, p. 72) could help me better understand how boar behaviour relates to human practices and spatial orderings. In other words, how space has been negotiated and co-produced. It was, then, an ethical and theoretical endeavour to, if possible, ethologise Dean bo(a)rderlands (see Lestel et al. 2006; Barua and Sinha 2017a).

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<sup>33</sup> Prior to fieldwork, I was enthused about the possibilities of using GPS tags to track and map boar. However, I was told by a government researcher this would require the involvement of multiple actors and agencies, for example, the FC to help capture boar, and vets to appropriately tranquilise them and monitor their wellbeing. Furthermore, it would also require a long and detailed application requesting permission for such research.

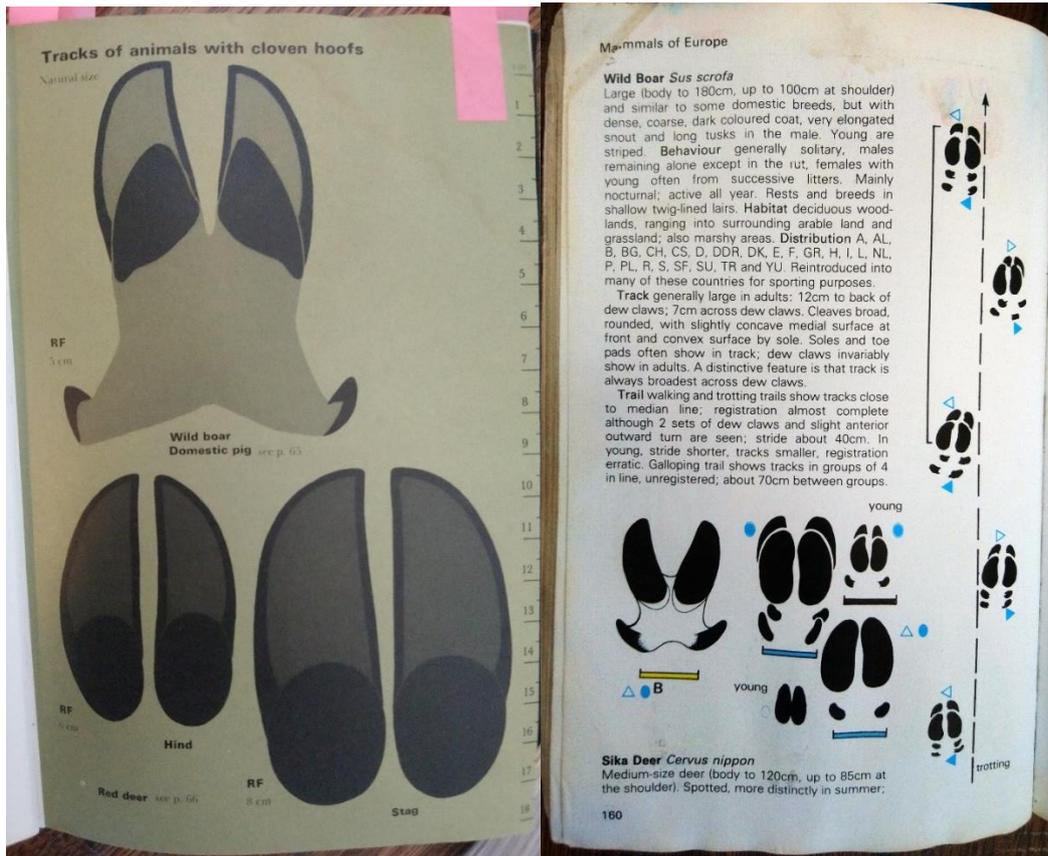


Figure 10- Boar hoof identification highlighting the dew claws in comparison to deer

Field guides, as shown in Figure 10, can be a critical device in identifying species (Law and Lynch 1988) and tracking elusive wildlife (Hinchliffe et al. 2005). When I first began tracking in winter, however, identifying boar presence was straightforward- their traces of rooting were conspicuous. Noticing desire lines leading into the vegetation was equally undemanding for boar, like many animals, create spatial networks and paths around which they frequently move (Bang and Dahlstrom 1974; Brown et al. 2004). Boar are made visible by their poaching of forest surfaces, disturbance of leaf litter or hindering of vegetative growth.

*Moving from the forestry track up a sloppy muddy bank into the vegetation. The dead bracken is low, and around me I can see it is laced*

*with trails everywhere. A literal 'meshwork'<sup>34</sup> of well-trodden paths... There are sporadic boar droppings- 'half-inflated rugby balls'<sup>35</sup>. Some clear prints here and there, others mashed on top of each other...It is not just boar, also fallow deer pellets. They seem to share routes, following the easy paths. (Fieldnote, 13/12/2016)*

Usually, boar hoofprints are distinguishable from those of deer due to the wide and regular indentations left by their dew claws. However, when animals trot, gallop or slip through mud, they become less discernible smears. Following trails revealed the multiplicity of the forest as the regular, human grid contrasted with an overlapping more-than-human network. Hoofprints, worn trails and dung led me to vast expanses of rooting, as well as more intimate 'places' important to boar life: nests, resting sites, wallows and scratching posts (see Figure 11). Some of these were surprisingly close to my house, on the edge of the forest or near footpaths:

*I have been tracking for 5-10mins through the deadened, rusty heaps of bracken. Walking slowly and carefully. Breathing gently and scanning. Staring ahead, I suddenly caught a glimpse of her. She is down there now, asleep. (I wait about 5 minutes, watching, resting leaning on a tree). She has just moved...oh, shit, there is another one...there are three females, I think, sleeping together, just behind some bracken...oh, and young! They are literally only about 5 metres from the footpath, completely obscured by the slope. (Fieldnote, 02/03/2017)*

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<sup>34</sup> I had obviously been reading Ingold (2011a) around this time.

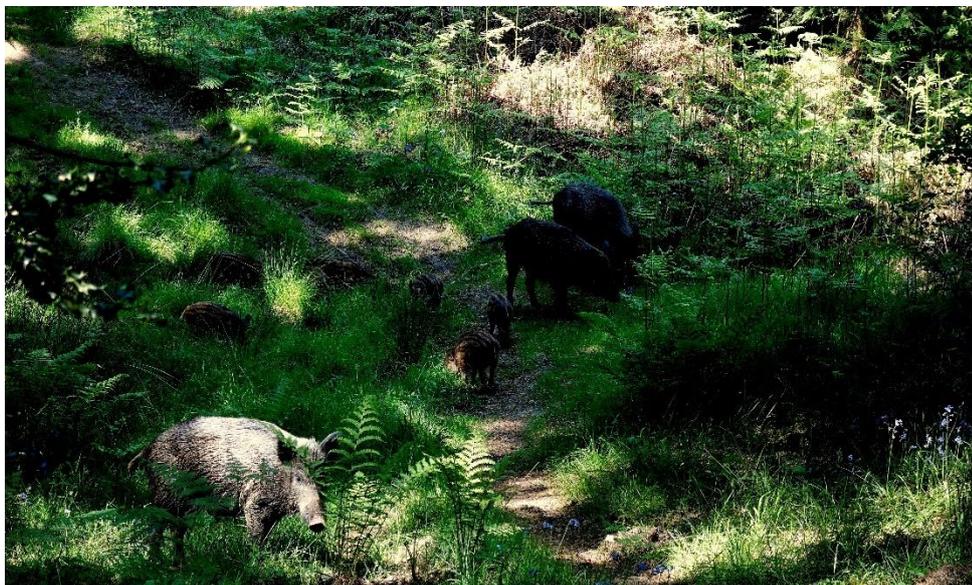
<sup>35</sup> This analogy, from Brown et al. (2004, p. 227), always sticks in my mind.



*Figure 11- Series of images from tracking showing hoofprints; tracks; tree rubbing; bracken trails; and boar pellets alongside fallow deer pellets.*

Tracking made me more attentive to the forest. It required walking slowly, breathing softly, watching my feet, paying attention to surfaces, listening intently, and inhaling forest smells- a multi-sensory 'attunement' (see Despret 2004). As I noticed certain behaviours, it also made me ever aware of the physiological and sensorial differences between myself and boar and the inherently different landscapes we occupied. My better vision as a biped, their better smell as a quadruped:

*I am almost standing in the open. I don't think she has 'seen' me as a human, yet. She can smell me though. The others quickly panicked and bolted. But the matriarch is standing, staring. She has moved a few steps nearer. She lifts her head up and down- she's uneasy. Perhaps catching my scent, or shifting her vision? I am also uneasy! I feel like I am not breathing but my heart pounds...but she has had enough, snorts, turns, and crunches into the bracken. (Fieldnote, 26/05/2017)*





*Figure 12- Images from tracking*

I logged my tracks on a Garmin GPS and recorded them using a Veho K2 camera attached to my head<sup>36</sup>. Rather than use an internal microphone, I purchased a RODE stereo microphone to record field notes as I walked, as well as to pick up atmospheric sounds- wind gusting, leaves rustling, ravens kronking, buzzards pweeeeing, twigs snapping, gravel crunching, mud sucking- and the silences in between. Using a headcam recorded the bodily movements and emergent experiences of being in the forest (Vannini 2015). It captured the ‘form’ of encounters as they happened and also brought to life the micro-geographies of tracks. In addition, to complement video I took photographs of interesting and significant locations in the forest, and throughout the Dean more generally, to help “evoke the sensory experience and feel” of fieldwork (Rose 2016, p. 319).

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<sup>36</sup> This is essentially a cheap version of the more familiar GoPro brand.

Utilising such a 'moving-image methodology' (Lorimer 2010c) meant I could make spoken (or whispered) field notes whilst simultaneously focussing on the behaviour of boar- what were they doing, how they were interacting, which part of the forest they were in. Unfortunately, however, re-visiting some of the videos became a challenging experience as the relentless kinetic movements were too intense, generating a kind of 'motion sickness'. This was compounded by initially having a slow memory card in the camera which made the video jerky, particularly when the battery ran down. Besides this, the quality of the video was not particularly good, something compounded by the need to fix the zoom, meaning that I filmed footage at mid-range. Critically, these videos also produced inordinate amounts of data, meaning I selectively transcribed these experiences to focus on key events, such as encounters, as in Figure 12, or significant boar places.



Though I regularly encountered boar, more often they were merely present-absences, elusive and enveloped elsewhere in the forest. Additionally, when I did meet them my bodily presence mediated the experience and, alerted, they often quickly disappeared. I felt uncertain, ethically, about the extent I wanted to unsettle them as their apparent flightiness likely reflected their power relations with humans i.e. boar are shot. Keen to observe boar beyond direct contact, therefore, I experimentally used camera traps to further learn their different, nonhuman forms of 'articulation' (Bear et al. 2017; Hinchliffe et al. 2005). Camera traps have become ubiquitous in ecological fieldwork, offering a disembodied presence placing 'new eyes on the world' (Porter et al. 2009). Both their practical applications (O'Connell 2011; McCallum 2013; Caravaggi et al. 2017) and social ethics (Verma et al. 2015;

Adams 2017; Sandbrook et al. 2018) are debated in ecological and critical conservation literature<sup>37</sup>.

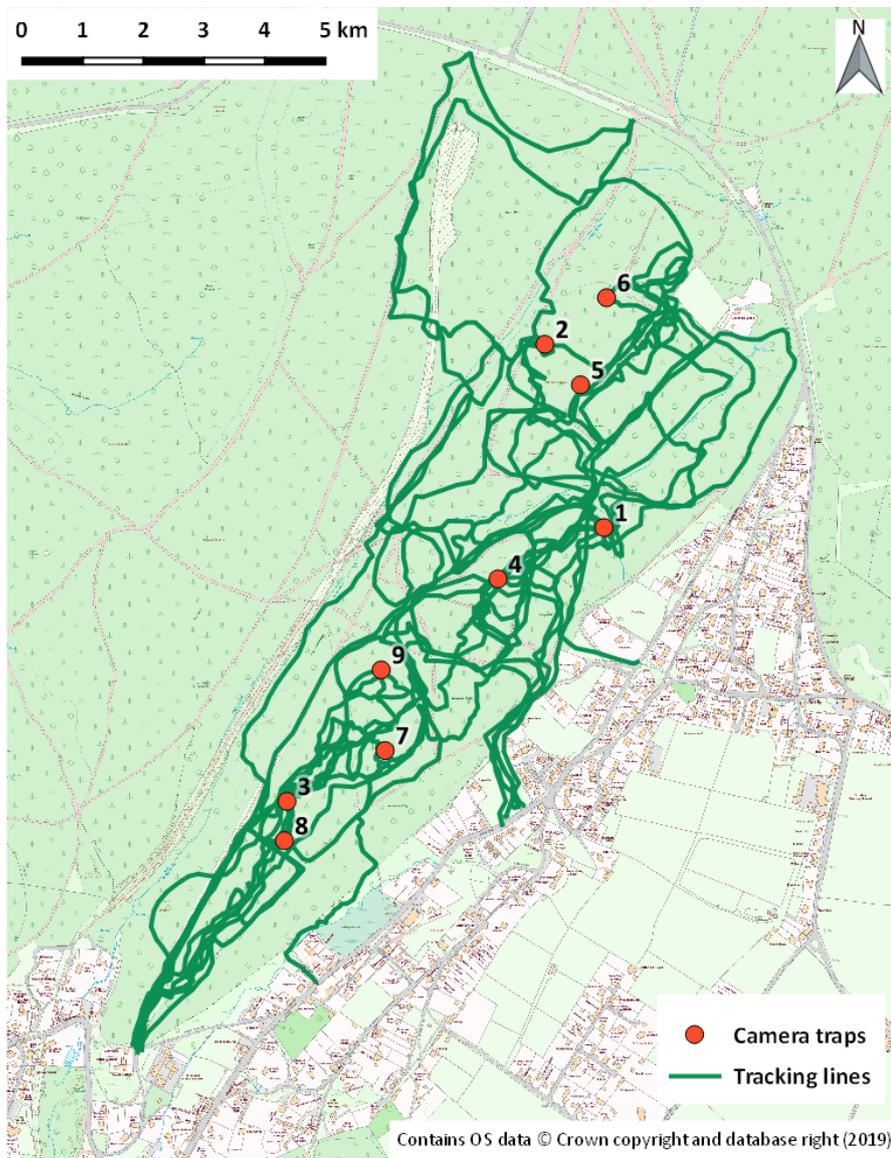


Figure 13- Map of tracking routes and camera traps around my patch

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<sup>37</sup> Adams (2017) and Benson (2010) discuss the interesting connections between conservation technologies and killing. Remote sensing technologies evolved from the military and tracking historically is a hunting practice. Getting close to animals has been facilitated by technologies of surveillance. This also applies to the thermal imaging technology used by the FC for boar monitoring, as described in Chapter 7.

Though there has been research into the value of camera trapping to estimate boar population and abundance (Engeman et al, 2013; Massei et al., 2018), rather than using cameras with a pre-determined “applied conservation-focussed hypotheses”, my interest was “curiosity-driven” (Caravaggi et al. 2017, p. 113). I wanted to carry out, in Lehner's (1998) words, ethological ‘reconnaissance’ into their multi-sensory, explorative, interactive and social activities. For this reason, rather than apply a random, systematic approach to placing cameras, I deliberately chose locations that seemed significant to boar- tracks with regular hoof-fall, disturbed areas of soil, wallows and flattened resting areas (see Figure 14).

The cameras, usually, were placed 50 cm or so from the ground and, ideally, angled slightly down towards sites of interest. All of these were considered in relation to the wider context- that they needed to be located in a place where people would not see and steal them, nor become ‘human bycatch’ (Sandbrook et al. 2018). The cameras (four Bushnell Trophy Cam HD models) were usually left in the field for a few weeks, sometimes a month or more, and set up to take 30 second videos.





*Figure 14- Photos of camera trap locations, and a camera trap itself.*

The places of these cameras became micro-geographical case studies revealing fragments of not only boar lives, but also other nonhumans: robins and blackbirds foraging in disturbed soil; deer sleeping under trees; foxes pouncing for mice; badgers tussling; dogs charging off the lead. The intimate lives of boar were revealed in multiple ways: urinating and bathing in wallows (as in Figure 15); piglets suckling and feeding; adults lounging and resting together; sounders taking turns to scratch on tree trunks; individuals trotting and walking without stopping; and up-close snouts, eyes and tawny hair. More than just visual, boar vocalisations were revealed as prominent in their communication- snorts, grunts, trumpets and barks (Garcia et al. 2016). And videos also captured the changing elements and seasons- winds, rains, drizzle and morning mists. These videos complemented my tracking by offering sustained observations of boar, specifically, those in my patch.



*Figure 15- Sow with piglets wallowing.*

Camera trapping was not without issues. My hope was to capture 12 months of boar, so, I decided to use faster, larger SD cards to leave the cameras for longer without checking. Unfortunately, I learnt some cards are incompatible with my cameras, so numerous trapping periods resulted in corrupted files. Additionally, despite taking care, some cameras were at bad angles so only captured videos of hairy backs, whilst, conversely, some were placed too low (in compensation), meaning they recorded few animals. Furthermore, for reasons still unbeknown, occasionally cameras only took pictures, rather than videos, or only took videos in daylight hours. Despite these issues, both tracking and trapping were methods that allowed me to focus on boar movements and places in the Dean. Appendix A shows tables outlining the dates cameras were in the field and includes a description of all the boar events they captured and their associated weblinks.

### **5.4.3 Participating/Observing**

Upon entering the Dean, my intention was to find ‘gatekeepers’ who would offer chances for participatory research with individuals or groups involved with boar (see Crang and Cook 2007; Hammersley and Atkinson 2010). Making contacts required foraging- mapping relations (as in Figure 16), moving tentatively around, testing the ground, finding places where things seemed interesting and digging deeper.

Early on, it seemed this had paid off. Firstly, I had positive, encouraging conversations with someone at a government agency involved in boar monitoring. I hoped observing ‘experts’ carrying out monitoring would offer insight into the performance of official boar knowledges (see Law and Lien 2013; Lorimer 2008), whilst also learning about boar myself. In other words, I could follow the trope of being an ethnographic ‘apprentice’ (Pitt 2016). Unfortunately, things didn’t turn out as I hoped. FC policy was shifting as austerity cuts took hold, roles changed, and the influence of my potential gatekeeper waned. He directed me to other officers who

were wary of my participation. For a while the door was kept ajar, keeping my hopes up, before such involvement fell through.

*He tells me he can't put his rangers at risk, that there are too many variables and risks. He seems to worry I would tell people exactly where and what they were doing. The FC have been burnt before. He adds that social science studies never offer them anything new, and that it might be different if I was a science student who could give them beneficial ecological data. (Fieldnote, 16/12/2016)*

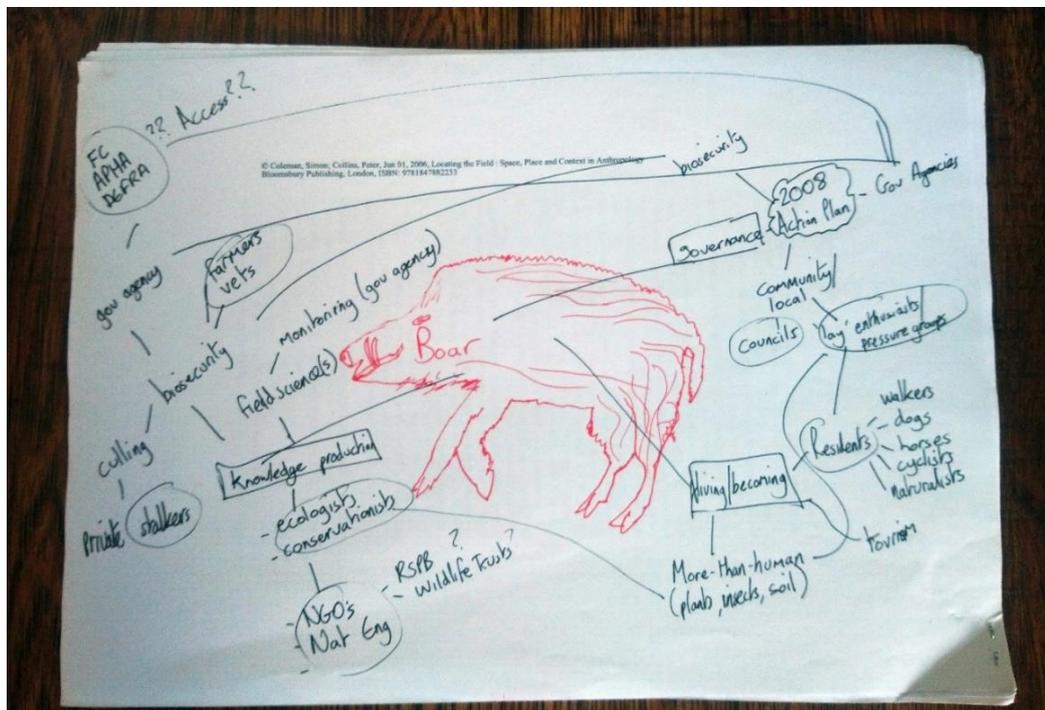


Figure 16- Diagramming possibilities for observation

Around the same time, I was in contact with a resident who represented a local boar advocacy group. We spoke on the telephone and he enthusiastically explained some of the work his group had done- estimating boar populations, helping residents with fencing and re-placing turf after rooting events. He was keen to meet, and I hoped this might also lead to interesting observational activities. When we met, however, the group wasn't quite as I imagined. In fact, it seemed there was no longer any practical action beyond providing 'a voice' for boar. It seemed like

practical interventions had ceased in previous years as, over time, differing personalities and wildlife ethics had fractured the group.

As well as these failed attempts, similar lines of enquiry also hit dead ends. I contacted other government agencies but either received no response or was politely dismissed. Similarly, other local wildlife advocacy groups replied stating they couldn't help me or had been disbanded. There was, then, an issue carrying out praxiographic research into boar. Firstly, official bodies were wary of offering access beyond interviews, and even these were difficult to attain. And, secondly, other groups with an interest in boar seemingly had no activities to observe.



While participant observation of boar related field practices failed, foraging uncovered other observational opportunities of a more traditionally 'political' manner. Firstly, around the time I started fieldwork, I was invited by an interviewee (see subsection 5.4.4) to attend a community group set up to discuss boar. This meeting was a sometimes tense, sometimes convivial affair comprising of a relatively disparate collective of individuals with positive intentions. The group, however, was short-lived and appeared to disband after this meeting. It seemed the tensions caused by diversity were never overcome. However, I stayed in touch with some of the other attendees, one of whom was a councillor keen to initiate a more formal 'action group' and who invited me to sit on their committee. Attending subsequent meetings for this action group meant I was able to observe interactions between councillors, members of the public and other key actors involved in boar issues. Via email, I was also kept in the loop with their progress, upcoming meetings and difficulties in engaging with policy-makers. Interestingly, it also meant my status and involvement became as participatory as observational, a move that subtly shifted my own sense of 'ferality' (See subsection 5.5).

Furthermore, in addition to this emergent action group, I also attended Forest of Dean District Scrutiny Committee Council (FODDC) meetings when boar were on the agenda. In theory, these involved six monthly updates from the FC, though sometimes they were delayed. Not only did these observations allow me to hear the updates of the FC, but they also helped me begin to understand the local politics, dynamics and tensions between individual councillors, political groups and agencies. Finally, I also attended several workshops held by the Forestry Commission, whether ones advertised for a public audience, or else ones for invited stakeholders with a known interest in boar.

#### **5.4.4 Interviewing**

A critical part of my methodology were semi-structured interviews, 63 of which I conducted with a range of different participants (see Figure 17)<sup>38</sup>. In basic terms, these could be understood as ‘guided conversations’ which allowed key themes and topics to be explored. Whilst partially-structured according to my objectives, I intended for these to be interactions that helped me talk ‘with’ people unhindered by prescribed rules and context (Valentine 2005). Throughout my interviews, therefore, I wanted participants to explore issues they felt were relevant, as well as use prompts or questions to guide them to ones that were important to me. Undertaking such interviews was critical to shine a light on the messiness of human-boar relations and their context within the Dean. To help find critical overlaps and patterns that might form a coherent narrative of the Dean, however, I used a loose frame of questions and themes which helped focus the interviews if needed (see

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<sup>38</sup> I had 63 interview situations. However, one of these was with a couple, whilst another one was with three friends. This made 66 formal interview participants. With 3 participants, I conducted both static and go-along interviews. In addition to these participants, there were countless interactions with people throughout the course of fieldwork.

Appendix B). Where relevant, these broadly related to interviewees relationship with the (changing) Dean; experiences of living with boar and other more-than-human cohabitants; feelings about boar belonging and their management; and understandings of policy, governance and responsibility.

NAME	STAKEHOLDER INTEREST/BACKGROUND	LIVES/WORKS IN THE DEAN	INTERVIEW	
			DATE	LOCATION
JAMES	Wildlife photographer	YES	28/10/2016 13/02/2017	Static (pub)/ Go along
JOHN	Forestry officer	YES	12/11/16	Static (workplace)
STEPHEN	Government agency representative	NO	14/11/16	Static (workplace)
NEIL	Wildlife photographer	YES	15/12/2016 20/02/2017	Static (home)/ Go along
DAVID	Government agency representative	NO	21/12/16	Static (home)
DARREN	Ecologist	NO	12/01/17	Phone
ALEXANDRA	Agricultural stakeholder representative	NO	16/01/17	Phone
NEVILLE	Farmer	YES	18/01/17	Static (home)
HARRY	Wildlife management representative	YES	19/01/17	Static (cafe)
MALCOLM	Resident	YES	19/01/17	Static (home)
CHRIS	Tourism	YES	06/02/17	Static (cafe)
EDDIE	Local Councillor	YES	13/02/17	Static (workplace)
IVAN	Local Councillor	YES	15/02/17	Static (home)
COLIN	Local Councillor	YES	16/02/17	Static (workplace)
ANTHONY	Wildlife management	YES	22/02/17	Static (home)
JEREMY	Local Councillor	YES	22/02/17	Static (home)
GARY	Local Councillor	YES	23/02/17	Static (bar)
KAREN	Resident	YES	27/03/17	Go along
SIMON	Resident	YES	27/03/2017 24/07/2017	Static (reserve)/ Go along
IAN	Resident	YES	27/03/17	Static (reserve)
MIKE	Resident	YES	27/03/17	Static (reserve)
ROB	Wildlife photographer	YES	30/03/17	Static (home)
MARK	Forestry officer	YES	01/04/17	Static (workplace)
TIM	Resident	YES	12/04/17	Go along
PATRICK	Conservation NGO representative	YES	24/04/17	Go along
LEE	Wildlife management	NO	06/06/17	Static (workplace)
MATTHEW	Conservation NGO representative	YES	12/06/17	Go along
ADRIAN	Resident	YES	13/06/17	Go along
SUE	Resident	YES	13/06/17	Go along
MARGARET	Resident	YES	15/06/17	Static (cafe)
LORRAINE	Resident	YES	15/06/17	Go along
GRAHAM	Resident	YES	18/07/17	Static (home)
ADAM	Conservation NGO representative	YES	19/07/17	Go along
ALISON	Forestry officer	YES	21/07/17	Go along

NIGEL	Ecologist	NO	23/07/17	Phone
CLAIRE	Conservation NGO representative	YES	25/07/17	Static (workplace)
PHILIP	Ecologist	YES	26/07/17	Static (home)
STUART	Wildlife management	YES	30/07/17	Go along
STEVE	Forestry officer	YES	31/07/17	Static (home)
PATRICIA	Resident	YES	31/07/17	Static (home)
DIANE	Resident	YES	31/07/17	Static (home)
NICHOLAS	Resident	YES	31/07/17	Static (home)
SHAUN	Wildlife management	YES	01/08/17	Static (workplace)
PAUL	Government agency representative	YES	02/08/17	Static (car)
NICK	Conservation NGO representative	YES	03/08/17	Go along
NATALIE	Conservation NGO representative	YES	11/08/17	Go along
JACK	Conservation NGO representative	NO	14/08/17	Phone
JONATHAN	Government agency representative	YES	08/09/17	Static (workplace)
LAURA	Conservation NGO Representative	YES	19/09/17	Static (cafe)
RUSSELL	Vet	NO	21/09/17	Static (workplace)
JEREMY	Farmer	NO	21/09/17	Go along
NIKKI	Resident	YES	21/09/17	Go along
ANDREW	Resident	YES	27/09/17	Go along
ALAN	Local Council	YES	27/09/17	Static (workplace)
ROBIN	Resident	YES	28/09/17	Go along
MARTIN	Local Council	YES	07/10/17	Static (workplace)
SEAN	Wildlife management	YES	09/10/17	Static (shop)
HEATHER	Tourism	YES	11/10/17	Static (home)
LINDSEY	Government agency representative	YES	13/10/17	Static (workplace)
PAUL	Ecologist	YES	17/10/17	Static (workplace)
WILLIAM	Farmer	YES	19/10/17	Static (home)
RYAN	Tourism	YES	24/10/17	Go along
SOPHIE	Government agency representative	YES	26/10/17	Static (cafe)
JOSEPH	Agricultural stakeholder representative	NO	26/10/17	Static (cafe)

*Figure 17- Database of interviewees*

The purpose of the interviews was not to produce a causative typology of attitudes and knowledges that captured the ‘truth’ of feral bo(a)rderlands, but to understand how individuals and groups might, in Valentine’s (2005) words, “experience and make sense of their own lives” (p. 111). That said, to help form a broader understanding of the contested presence and multiple understandings of boar in the cultural Dean landscape, it seemed vital to interview a range of participants who might have different kinds of encounters; whose lives and livelihoods might be affected in different ways; who have specific knowledges of boar, other nonhumans and their ecologies; and who might be involved in making significant decisions

about how humans should secure and value their presence. Identifying and speaking to different stakeholders would generate material that could help produce a wider, narrative account of, amongst other factors, the multiple relations, places, ecologies, knowledges, feelings, memories, power dynamics and politics of Dean bo(a)rderlands. Finally, the empirical chapters do not systematically account or quantify the views of all interviewees, a task which is hard due to the often contradictory and conflicted feelings many people have towards boar. Rather, to aid the narrative, I often use selected events, characters or quotes that either sum up wider sentiments, or else highlight salient points of interest or tension.

Rather than having a single sampling method, I followed a relatively flexible process reliant on tracking stories and events that happened prior and during fieldwork, and instinctively followed leads (See Figure 18). In this regard, it was a hybrid of 'theoretically driven' and 'snowball' sampling which allowed me to take up opportunities that emerged in the field and from my different methods (Gobo 2008). To set things up, I created a database to identify and co-ordinate potential participants and organise their contact details. This included key stakeholders, whether individuals or organisations, involved in governance who I identified through official documents, such as the DEFRA Action Plan or council reports; 'experts' who had either written about UK bo(a)rderlands or been involved in research projects and management strategies; prominent local individuals and groups with a publicly visible interest in Dean boar and who appeared in the press or on digital media, such as Facebook; individuals with a specific interest in boar biosecurity, such as farmers, vets, stalkers and ecologists; and, finally, residents whose everyday practices and interests may, or may not, be affected by boar.

Interviews were organised in different ways. Many people were contacted cold via publicly available email and phone details, or via social media. Others were suggested by interviewees who passed on contact details, or else dropped names and places into conversations, allowing me to form new relations (Valentine 2005).

Moreover, by hanging out in the Dean, my path crossed with other people, whether walking, volunteering, attending meetings or going shopping, leading to further interview opportunities. Other unexpected opportunities also arose, including being asked to write a small article in a local newsletter which encouraged residents to contact me to discuss boar. However, establishing communication was not always straightforward. Firstly, many 'official' stakeholders did not respond to communication or, if they did, directed me to policy documents or deferred to governmental hierarchies i.e. DEFRA. Similarly, some 'communities' were equally difficult to access and arrange interviews with, notably, active members of the stalking community, farmers and vets. This might have been because people were unsure 'who' I was and 'what' my intentions were- as a PhD researcher, I was unknown. Without a definitive gatekeeper and researcher profile, it felt as though some avenues were shut down by the volatility of boar politics and the risks for people getting further involved.

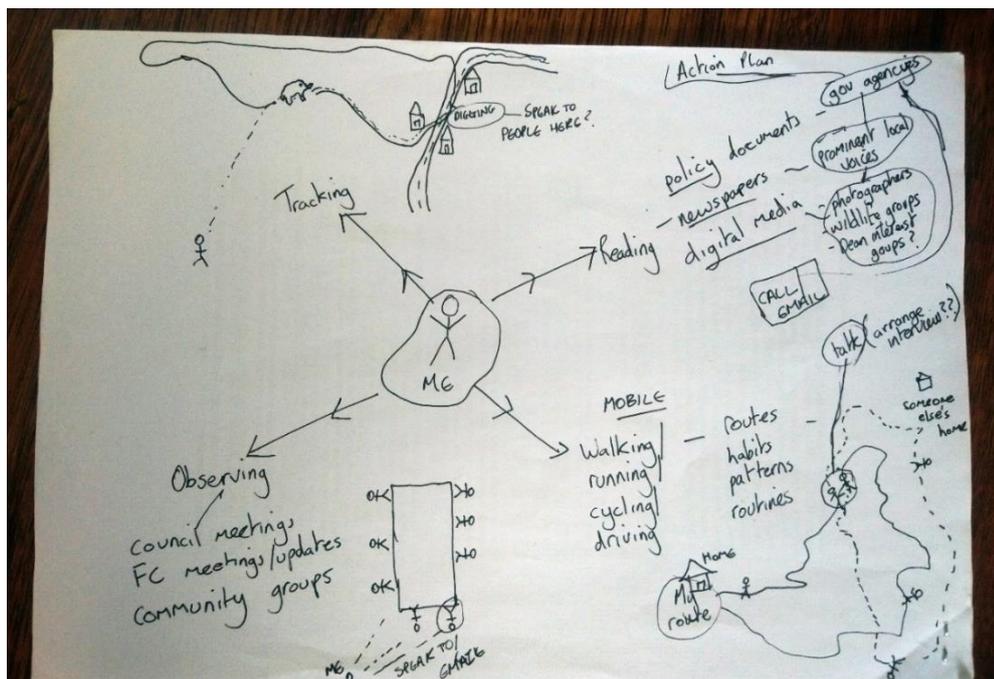


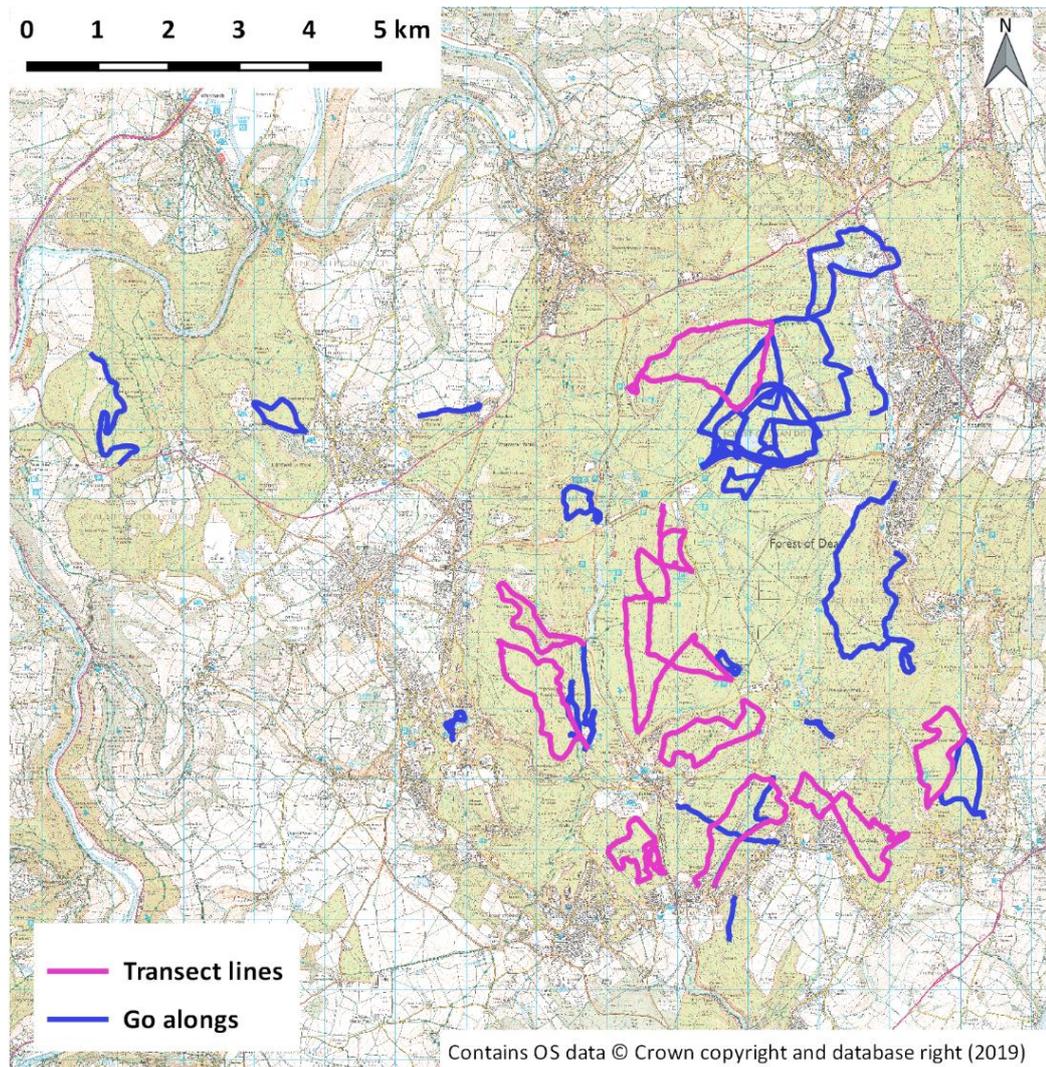
Figure 18- Diagramming my interview sampling possibilities in relation to other methods

To help participants feel at ease during interviews I asked them to suggest a place to meet (McLafferty 2010). My preference was for these to be in the forest, for reasons explained in the following subsection, but this was not always possible.

Therefore, 44 of my interviews were 'static' and took place in a wide range of locations- homes, pubs, cafes, shops and offices. I found these locations contributed to my broader understanding of participants, their backgrounds and practices and appreciated that these different interview situations, themselves, co-produced the information I gathered (Edwards and Holland 2013). In addition to static face-to-face interviews, I also conducted 4 interviews on the phone with participants who I was unable to meet. All interviews were recorded on a voice recorder app on my smartphone, primarily as a way of reducing the formality which a dictaphone might instil. I also had a notebook to hand in which I could make additional notes e.g. the names of suggested contacts or places or refer to interview themes if necessary. After each interview, I made general notes on the tone and broader sentiments of my participants, as well as notes about the location and situation.



As an alternative to static semi-structured interviews, I also carried out 20 'go-alongs', hybrids of participant observation and interviews (Jones et al. 2008; Kusenbach 2003) (see Figure 19). As opposed to static interviews, these offered possibilities to draw out the embodied and sensory relationship between people and the Dean "as it happens" by observing regular routines, habits and practices (Dowling et al. 2016, p. 683). In particular, I wanted to understand how knowledges are generated, how presence is negotiated, and how sensing their places might create different intersubjective experiences and atmospheres. Furthermore, by 'walking and talking', I hoped to experience the material places inhabited by participants and use the broader environmental context to prompt discussion (Anderson 2004), thus easing some of the artificiality of static interviews (Carpiano 2009).



*Figure 19- Map showing go along routes and transects*

All participants were offered the chance to meet in the Dean and determine our ‘go along’ locations or routes, a more empowering approach for participants and one that might foreclose safety concerns (Jones et al. 2008; Carpiano 2009). Critically, this also reiterated my interest in participant’s regular practices, interactions and rhythms. Those who agreed were also able to dictate the time, day and type of engagement, leading to diverse and varied go-alongs. These included recreational activities including walking, dog walking and wildlife tracking and photography, as well as work related site visits and routines. Upon meeting, I reiterated my research interests and explained I was keen to know about their experiences in the forest

and the way it might have changed, as well as their memories and encounters. Besides this, my list of themes was similar to those of static interviews.



*Figure 20- Snapshots from go-alongs with two different dog walkers in different forest habitats*

As with tracking, I logged go alongs and, when participants consented, recorded them, this time with the camera attached to my chest (see Figure 20). When this wasn't possible, I took photographs of places that were significant either to my participant, or that emerged as relevant in the go along situation. Using video as a modality helped me not only 'see' but also 'feel' our shared experience retrospectively, thus helping analysis (Laurier 2010). Moving and communicating helped participants impart and share quite specific place-knowledge and memories

that would have either been unmentioned or spatially abstracted in a static interview (Lorimer 2016a). For example, people told me about their relationships with specific forest stands, trees or paths; the transient histories of forestry and industry; memories of past happenings with friends and loved ones; and encounters with deer, owls, goshawk, adders, boar, and even feral big cats. Video helped me make notes on the physical and atmospheric qualities of affective locations. Additionally, videos also helped me be more attentive to embodied movements in the forest, whether of individuals or else human-dog relationships (see Brown and Dilley 2012; Fletcher and Platt 2016).

*Neil is constantly scanning the ground and our periphery- turning, glancing, scouring. Then he abruptly stops, listening dead still. His eyes are always flicking around, even if we are motionless and listening.  
(Fieldnote from walk with Neil)*

*We have stopped on a straight path. He says he always puts his dog on the lead here. He has seen boar a few times over the last month. 'Classic boar area' he says. He points to our left- thick, juvenile conifer plantation. Completely dark. Impenetrable to people. 'See'- he points to a small, black tunnel about 5m ahead where boar clearly move in and out. We wander up towards it. (Fieldnote from walk with Robin)*

Go alongs allowed me to better comprehend the skills and situated knowledges of my participants. More than just being walks, therefore, these sometimes became events of 'knowing and showing' (Pitt 2015). Among many emergent topics, participants explained woodland habitat management; hidden, industrial ruins; ways of identifying and picking mushrooms; forestry operations; and wildlife photography techniques. Furthermore, recorded go-alongs also showed less apparent habits and rhythms that were picked up on video.



Finally, all participants were told and given a form outlining this they would be anonymised, and involvement made confidential. Though some people said they

were not concerned and were happy for their voice to be heard, I concluded to give everyone a pseudonym. I did the same for representatives of public organisations, even though they themselves knew their participation would be difficult to anonymise. However, I took care to give my participants appropriate pseudonyms, rather than ones that might “redefine [their] character” (Ogden 2008, p. 2). To do this, I used an Office for National Statistics database of popular birth names through the 20<sup>th</sup> Century, and selected ones according to participants’ likely age and name popularity<sup>39</sup>. In the case of organisations, I use the proper names for government agencies, whilst use generic categories for others e.g. conservation group, local environmental interest group. Likewise, I refer to ‘parish council meetings’ without naming the council, or ‘action group’ without naming the specific group. Finally, I use real place names, rather than adopting geographical pseudonyms. This is the case if I when referring to locations visited with participants away from settlements which would not compromise their identity. On the other hand, locations that might reveal participants’ identities are deliberately vague. Finally, as are some of the ‘boar places’ I encountered, in accordance to the wishes of participants.

#### **5.4.5 Gathering and Analysing**

My various methods assembled audio and written fieldnotes, audio and visual recordings from interviews, photographs, videos, policy documents and minutes from meetings. This abundant and heterogenous collection was somewhat overwhelming and discordant. Whilst I was constantly ruminating on what I was

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<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/babynamesenglandandwalestop100babynameshistoricaldata>

encountering and generating, it was important to pay detailed attention to key themes and patterns that traced through and, at times, beyond the Dean.

To begin the challenging process of bringing this qualitative data together, I transcribed interviews, go-alongs and audio and written fieldnotes. This was done through dictation using 'Dragon Naturally Speaking' software, something I found faster than typing, in combination with 'Express Scribe Transcription Software'. Transcription helped "re-familiaris[e]" (Crang 2005, p. 220) myself with data. As many interactions were conversational, rambling and long- namely, when participants described their relationship with the Dean or digressed into tangential Dean politics- rather than copy everything *ad verbatim*, I selectively transcribed relevant sections, one of the many ways my researcher positionality and subjectivity was exerted (see subsection 5.5).

As well as transcribing audio recordings and notes, I made accompanying 'memos', or analytic descriptions, which commented on the relational hinterland of these interactional situations (Crang 2005). These referenced, for example, the material environment and its 'interferences' (Law 2004); the time of day and weather; as well as body language, gestures, hesitations and intonation. In other words, the situated 'affective atmosphere' of interactions (see Anderson 2009). Filmed go-alongs and individual tracking transects were dealt with similarly, however, transcribed text was interspersed throughout with description deriving from the processual, visual data. This focussed on the transient more-than-human, multi-sensory environment within which we were moving and our multiple interactions within it. Extraordinary moments, either in places identified as significant by participants or during wildlife encounters, were attended to in more depth. These narrative transcriptions were marked with times that corresponded to relevant points in the video.

I collated, arranged and coded my textual data using NVivo software. Codes might be understood as “summative, salient, essence-capturing, and/or evocative attribute[s]” (Saldaña 2015, p. 3) and create links between data collection, analysis and translation. These were used to categorise and identify themes, patterns and connections through my qualitative data (Crang 2005; Crang and Cook 2007; Cope 2010). As discussed in earlier chapters, categories, classifications and typologies problematically reduce complexity (Law and Mol 2002), however, I understood codes more as a means to distinguish data and make it analytically manageable, rather than to rigidly fix or order it (Emerson et al. 2011). Moreover, as with transcription, the process of coding demands “immersion in, and entanglement with” data, allowing me to continue feeling and making sense of situations long after actual experiences (MacLure 2013, p.174).

An initial approach of ‘open coding’, which established broad, emergent themes, developed into a more ‘focused’ and nuanced one (Crang 2005; Emerson et al. 2011). My codes, broadly speaking, related to diverse relations, practices, encounters, events, places, temporalities, and their perceptual, affective, emotional aspects (see Saldaña 2015). These were established by working through transcripts and highlighting important data. As this process advanced, earlier codes were affirmed or unsettled, and sometimes merged, split or were discarded (Crang and Cook 2007). Much like research itself, coding was not a smooth, linear process, but one that became “circular, sporadic and...messy” (Cope 2010, p. 445). As it helped me describe and analyse patterns within individual datasets and across multiple ones, it revealed absences as much as presences, overlaps and tensions, coherences and noncoherences (Law 2004). Coding, therefore, was less about establishing boundaries, but about creatively, reflexively and ethically finding ways to deal with ambiguity and mess (Saldaña 2015). In other words, accepting that relations between different modalities of data and subjects are themselves, disorderly and feral.

Regarding visual data, photographs were also imported to NVIVO and linked to their corresponding textual fieldnotes, interviews or go-alongs. Otherwise, all photographs were stored separately in a digital folder where they were arranged chronologically, generating a visual database of Dean and boar temporalities, as well as a visual journey through my research. They were also given simple titles, or codes, so that they could be re-arranged thematically if I desired to use them as illustrative examples for discussion. This was important as bringing together different forms of data within the thesis helps reflect the messy, more-than-representational “bricolage” that co-constitutes ethnography (Crang and Cook 2007, p. 178). Images help “evoke the sensory experience and feel” (Rose 2012, p. 319) of feral bo(a)rderlands, whilst simultaneously highlighting the partial and fragmentary nature of textual representation.

Finally, camera trap videos were also collated outside of NVIVO, primarily, because of their file size. Firstly, all videos were arranged into folders relating to their location and labelled simplistically according to the subject or trigger e.g. boar, fallow deer, wind. Secondly, all boar videos were gathered in a single folder and arranged chronologically as a list of video ‘events’ (see O’Connell et al. 2011; Caravaggi et al. 2017). An event was understood as a series of videos triggered by boar during which no video was more than 15 minutes after the first. Separate videos understood as belonging to the same event were then stitched together into a single video file. The length of videos, consequently, varies, depending on the period boar remained in the presence of the camera. All of these were uploaded to YouTube and are also described in Appendix A.<sup>40</sup>

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<sup>40</sup> <https://www.youtube.com/channel/UC48U9jG-j62IHBT6hIV9KfQ/featured>

As with textual coding, creating linear, arborescent coding structures is common within ethological studies of animal behaviour, as is writing meticulous descriptions of behaviour (see Lehner 1998). However, as a novice 'ethologist', I was uncertain of my ability to accurately do so and was wary of anthropomorphising boar behaviour, even though this can be done in a 'responsible' manner (Johnston 2008). Secondly, I saw the videos as an opportunity to witness multisensory boar places, mobilities, interactions and subjectivities in motion and without being extensively mediated through discourse (see Pink 2009). Following the suggestions of Bear et al. (2017), I decided to minimise detailed analysis, giving space for ambiguity, individual interpretation and to allow boar, to a degree, to "speak for themselves" (ibid p. 252). Videos, therefore, rudimentarily identified boar (e.g. individuals, sounders), key behaviours (e.g. foraging, commuting), sensory interactions (e.g. sniffing, touching, grunting) and further interesting observations (e.g. playing, fighting). This served two purposes. Firstly, it helped build my own knowledge of boar places within my 'patch' and, secondly, the videos are used to not only illustrate discussion in subsequent chapters, but elicit affective responses and actively engage readers/viewers in boar worlds beyond text (Lorimer 2010c; Pink 2013).

## 5.5 Feeling 'feral'

*They are called feral for a reason. They are here, sure, but they don't really belong here. (Andrew, resident)*

*You get used to the boar. I did. I was quite unsure at first, but you start to learn what they do, and you can figure out where they might be. Well, at least a bit...You can probably avoid them if you want to, or find them if you want to...but, hmmm, they are still a bit of a mystery! (Tim, resident)*

Like all research, my ethnography was suffused with issues around positionality, identity and the complexity of power relations (Hammersley 2006; Bryman 2008). Researchers are, of course, people positioned in relation to categories such as gender, ethnicity and age, and informed by personal and cultural biographies and knowledges. Critical research over the last three decades has accumulatively “dismantle[d] the smokescreen” (England 1994, p. 243) around impartiality, objectivity and disembodied research. Rather than “contaminating (the) data” (ibid, p 243), researchers are understood as unavoidably involved in the endlessly textured worlds and co-productions of knowledge, making research “an inherently political act” (Dewsbury and Naylor 2002, p. 254).

Reflexivity is understood as critical to addressing issues around position. This is not necessarily straightforward, suggesting as it does that researchers themselves are entirely coherent, centred, certain, present and fully representable (Rose 1997). Alternatively, however, by understanding myself as in relation and ‘becoming with’ others, I tried to make reflexivity more transparent. In other words, my research was the product of my ‘social relations’ with others (Crang and Cook 2007). Carrying out my research, therefore, I was more than aware of the need to be attentive to my relations with others. In ethnography more than other methodologies, these have traditionally been framed through binary insider/outsider classifications (Bryman 2008), or through conceptions of being, for example, ‘professional strangers’ or ‘marginal natives’ (Van Maanen 2011). However, in practice, I found things far more fluid, and my position shifted according to different relations and changes over time.

Though I rarely felt settled and my research always seemed uncertain and contingent, one of the reasons I moved to the Dean was in the hope it might have a positive effect on the way people perceived and related to me. This certainly enabled fieldwork and made some people more receptive to my research. This became part of my identity and created a sensibility that I would understand boar

politics and the Dean better, something revealed in comments such as ‘you know what it’s like’ or ‘you’ve probably seen the news about...’. Conversely, for certain other people my living in the Dean didn’t change what I was: a researcher or, perhaps, just a stranger. In this sense, where I lived didn’t matter, more that I was an unfamiliar face and, perhaps, someone to be treated with caution:

*The meeting finished, and people were circulating around the room. Some comfortably struck up conversations. They have probably known each other for years. I didn’t want to leave, so started looking at the paintings on the wall, then approached someone. He asked where I lived and seemed surprised. He “wouldn’t have thought it”, he said. My accent ‘clearly wasn’t from here’. I said I’d been there for about 7 months, and he nodded, silently. I felt uncomfortable, very much an outsider. (Fieldnote, 26/04/2017)*

*I bumped into the same old chap I saw a week ago. We exchanged pleasantries. Turns out we don’t live far away. He’s been here ‘forever’ he tells me and then asks about me. ‘There isn’t a better place in my eyes’ he says, ‘you might find you don’t leave’. He was welcoming and seemed happy that I appreciated the place he had spent his whole life. (Fieldnote, 28/01/2017)*

As a researcher, therefore, my ‘lines of identification’ were multiple and relational (Crang and Cook 2008). This, however, also reflects the multiple selves we embody-our identities are always relational. Another way this manifested in the Dean was through the way I presented myself to participants. I was aware their impressions would matter, and so found myself dressing differently for different participants with vary successes. Relatedly, my vocabulary also affected how people perceived me. For example, wearing similar clothes and speaking confidently about ecology, wildlife and tracking seemed to elicit trust from naturalists. On the other hand, meeting some rural landowners and farmers revealed cultural differences and I was told, “I didn’t really look like someone who understands these issues” and that I “wasn’t of the countryside”.

My researcher identity and intersubjective relations, therefore, were mediated by my own embodiment, whether through my accent, dress or physical appearance. As the above examples show, sometimes this fostered a rapport with participants, whilst at other times discord. However, there were other complications that arose relating to positionality. My interest in movement and encounter meant I was keen to utilise methods that involved embodied interactions in the forest, something which raised issues I hadn't necessarily considered. Firstly, and perhaps most obviously, some people were wary of meeting in the forest:

*I like to think I am sensible about when and where I go walking. I tend to have routes I know...Some places have people around, but some places are quiet. I say all this but, and no offence, I have just come and met a stranger in the forest. My friends would tell me off for this kind of thing. It doesn't seem very sensible, does it! (Nikki, resident)*

For Nikki, my gender was an issue when it came to decide when, where and whether to meet me. Though we met and went for a walk, my position as a male was an issue of personal security and wellbeing, something that prompted me to consider how this might have affected other relations and research possibilities. Though I met both men and women in the forest and at their homes, it is likely that security was a concern for many participants. My lack of genuine forethought to this probably reflected a naivety towards my privileged position as a white male, something I felt quite ashamed of.

Another aspect of embodied research that I had partially overlooked was physical ability. I was keen to meet people in the Dean and gain a mobile, more-than-representational insight into their relationship with the environment. Whilst I understood some people would rather have static interviews, I hadn't really thought through how different people might respond in the forest.

*We walk up a bit of a slope, Kevin pointing out some boar dung and digging on the path. Then he stops, leans over, and raises his hand towards me, reassuringly. 'Bloody hell', he says between breathes, 'I do this all the time myself, but I'm not used to gassing away to other people while I walk!'*

This continual feeling of multiplicity extended to ethics and values. I found there was always a tension as to how much I should reveal in conversations when people asked me questions or left space for me to engage with their responses. A frequent issue that arose, unsurprisingly, related to hunting and culling. Though many people were conflicted about their own feelings, others had firm and set views, ones that fed into the polarised politics in the Dean (see Chapter 8). The way I represented and reacted in conversations varied not only on the immediate context but was also considered in relation to future research possibilities.

*During our conversation, Patricia said she couldn't understand why people got pleasure from hunting and that they must have something wrong with them, to watch 'innocent animals die'. I was self-conscious that I had observed a hunt in Spain as a researcher, which I didn't think she'd understand. I knew if she was aware of this experience, the interview would change course. Obviously, I avoided mentioning this. (Fieldnote, 31/07/2017)*

*I met Shaun in a country sport shop. We were surrounded by rifles, shotguns, scopes, knives, fishing rods, bivvies, floats, waders, binoculars, khaki trousers, 'silent' jackets...I knew he shot boar, deer and perhaps other animals. He asked, unaggressively, if I was 'an activist' or had any experience of shooting. I told him about Spain, about the montura. (Fieldnote, 01/08/2017)*

These different situations and interactions show how performing research always involves "staging" and projecting certain selves (De Laine 2000, p. 38), something which often left me feeling awkward. It also served to highlight that I was in a

position of authority and able to determine research. Though I could be reflexive about these asymmetrical power relations, this did not “dissolve tension” (England 1994, p. 250). These power asymmetries were omnipresent and complex. Some people framed me as ‘the expert’ and wanted to know my views before they gave theirs. Others told me ‘confidential’ information I had already been told by other participants. Alternatively, there were times when I, myself, felt like ‘prey’ (De Laine 2000) as participants tried to manipulate my presence for their personal advantage.

This leads to a wider point. Over the course of a year, I began to understand both the forest and the Dean better than I did at the beginning. During this period, it became increasingly apparent that my position was more fluid than I initially realised. As my presence was more prolonged and familiar, so my relationships and identity shifted and evolved. For example, at some council meetings I was asked to join in and contribute, rather than merely observe and make notes. Otherwise, previously indifferent people began to recognise my face and interests and shifted from indifference to warmth and inclusion. Though I had always taken my research seriously, these kinds of incidents highlighted the ways in which my research was not just, in Law and Singleton's (2013) words, “working *in* the world” but was also “working *on* the world” (p. 1-2, emphasis in original). Inclusion reiterated the ways in which I might be interfering in and changing the world I was researching (Law, 2004). Responsibly engaging with the performativity of research, therefore, appears to be about the ways and extent to which one engages, rather than disengages, with these complexities.



Through I began to settle in the Dean and was reluctant to leave, I never truly felt settled. Things always felt precarious, in part, because I was carrying out research that was exploratory and uncertain. Additionally, I often felt caught between institutional obligations and my fieldwork. Though the boundaries between these were blurry, I frequently felt lodged between the orders and stabilising structures of university; and the experimental, messy, contingent and unruly Dean. There

were frequent occasions I was drawn away from the Dean for meetings, mini-vivas and away days. I also made decisions I regretted such as committing to teaching, organising a conference, preparing papers and attending conferences. Additionally, this was further complicated by my alternative life in Bristol. My mind and body was frequently drawn from the Dean elsewhere. Furthermore, tragic events surrounding a close friend pulled my mind in ebbs and flows away from the Dean for much of my fieldwork. These physical and emotional interferences built up and affected fieldwork in multiple ways. Sometimes, leaving and returning to the Dean days or weeks later felt disorientating. At other times, being in the Dean felt exhausting and relentless as I balanced multiple lives.

The ambiguity and precarity of fieldwork, and my ambiguous and multiple identities as a researcher always reminded me of something in particular: boar. Throughout, I felt a sense of liminality and uncertain belonging; a need to forage to see what might be unearthed and to survive; and to be reflexive and adaptive to practices and relations. Investigating the Dean as a bo(a)rderland, made me reflect upon tensions throughout my own research borderlands, ones that manifested as a sense of ferality.

## **5.6 Chapter Summary**

This chapter described my ‘feral methodology’ which was rooted in a belief that, if the life and its relations are emergent, research itself ought to follow suit. To explore the complex places, practices and politics of feral bo(a)rderlands, I carried out a range of methods to amplify different patterns, habits, experiences and understandings relating to boar. Though this research was at times uncertain, this is not to say there was no care or planning. Rather, it reflects the necessity of diverse, slow, reflexive and vulnerable research for feral subject matters. Tsing (2012) suggests “foragers nurture *landscapes*” (p. 142, emphasis in original), and my

'foraging' intended to nurture better understandings of the Dean and feral  
borderlands more generally.

## FERAL PLACES

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### 6.1 Introduction

This chapter focuses on the emplaced knowledges and multispecies lives that co-constitute the Dean. Places and landscapes can be understood as dynamic, relational choreographies of lives embedded with multiple meanings, socialities, histories and memories (Edensor 2010a; Ingold 2011; Cresswell 2015). The Dean, like elsewhere, is ‘in tension’ (Wylie 2007), simultaneously producing and being produced by interconnected collectives and individuals, proximate and distant relations, bodies and minds, humans and nonhumans. Understanding the arrival of boar as a form of ‘disturbance’ (Tsing 2015), I consider how existing social relations are being reconfigured, new ones being formed, and everyday practices negotiated<sup>41</sup>.

Structured around the dynamic milieu of the Dean, the chapter tracks how the spatial-temporal rhythms, behaviours and activities of boar entangle with others, such as humans, dogs, bracken, bluebells, invertebrates, spruce trees, or pigs<sup>42</sup>. Boar encounters and the traces of their activities evoke a range of affective responses which, for humans, might congeal as multifarious concerns over bio- and

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<sup>41</sup> Engaging with the camera trap videos here is the reader’s prerogative. However, they might be used to accompany the stories and themes of this chapter and provide an alternative perspective of the Dean and its seasonal rhythms.

<sup>42</sup> Due to space, this chapter is unable to explore many other boar relations, including with other nonhumans such as horses, deer and badgers.

ontological (in)security, or else feelings of allure and excitement. These are not only informed by biocultural understandings of the forest and human-nonhuman relations, but also fluctuations in boar behavioural ecologies, their relational autonomy and charisma. I show how (re)introduced boar can make messy places messier, generating uncertainty and blurring human-contrived spatial and moral (b)orders. In other words, their unanticipated return makes other places and lives 'feral', as much as their own. Moreover, this chapter shows how the precarity of feral rewilding churns through time and space at multiple scales, affecting different actors in varying ways.

Happenings in the Dean are more complex than this chapter can convey. Human-boar relations are fluid and contingent. That said, there are annual patterns and rhythms that seemingly occur over the course of a year, and the chapter is structured around these. Rather than follow a quad-seasonal structure, a concept that doesn't fit succinctly with boar in the Dean, I instead talk through periods of senescence (decay), emergence (regrowth), and verdance (abundance). This offers a greater sense of the continual, dynamic changes and imprecision of temporal-spatial boundaries in the Dean.

## 6.2 Senescence

*The Dean weather increasingly oscillates fine and inclement. There are occasional blue skies with high, crystalline cirrus and biting air; and then dank days, vapour hanging heavy and making the forest soft and damp. There seems to be more drizzle than heavy rain. However, when it does pour, it drums rooftops and slaps through the tree canopy, saturating the ground and making tree trunks slick with moisture. The afternoon sun hangs lower and lower and darkness falls fast, catching me out on walks and runs.*

*As weeks move on, patches of the forest floor gradually thicken with fallen deciduous leaves beneath semi-naked branches and canopies. On some oaks, beech and sweet chestnut, golden and ochre leaves hang on branches well into winter. In contrast, the dense conifer plantations appear timeless and static, dark walls of evergreen devoid of understorey- mats of broken, brittle sticks and dead needles. Bracken fronds collapse on each other, forming thick crumplings of rusted orange vegetation that sometimes snap underfoot.*

*The soils in the forest become softer, muddy and squelchy underfoot, transcribing the activities of its inhabitants. Human and nonhuman prints reveal movements through the forest, not only on and off mapped tracks, but into and out of the surrounding land, whether village or agricultural. Lives are increasingly made more visible by the elements and dynamic matter of the forest.*





*Figure 21- Senescence in the Dean*

This first sub-section explores how senescence brings dramatic alterations in boar movements which blur boundaries. Boar individuals and sounders increasingly forage in villages, disturbing soils and moving in spatial and, on occasion, temporal proximity to humans. Simultaneously, decaying vegetal life broadens forest space, making it more open and, consequently, predictable. As surroundings widen, intimate multispecies interactions seem easier to avoid or seek, depending on preference. During this period, human-boar tensions seem high, something reflected in this subsection's length.

### **6.2.1 Disturbing villages**

It didn't take long to sense boar had changed the Dean. Over the early weeks of fieldwork, everywhere I went seemed marked by their omnipresent traces. Walks through the forest revealed extensive areas of rooting in deciduous tree stands, forest rides and grassy margins. Beyond the forest, however, their activities appeared most conspicuous. Driving down village high streets and through greens, outside pubs, and alongside the perimeter fences of sports pitches and visitor centres, there were signs of foraging. In fact, everywhere appeared at least slightly disturbed by soil pushed around and clumped. From autumn through winter, boar, it appears, move freely between forest and villages. Dean space was fluid (Murdoch 2006), its boundaries porous (Buller 2014).

Such disturbance shows their omnivorous diets and soil-centred foraging allows boar to move freely throughout heterogenous landscapes, rather than stick to woodlands (Keuling et al. 2017). Their snouts have a flattened, cartilaginous disk attached to a network of muscles and ligaments allowing it to move independently, enabling boar to sift with subtlety or lift heavy clods of earth (Watson, 2004). Furthermore, their nostrils have separate muscles that act as valves, allowing inhalation whilst digging. Simultaneously smelling, feeling and feeding in soil can make foraging a messy, rapid and extensive activity. The expanse and visibility of their excavations has spawned a profusion of terms among residents: churning, rootling, rumping, disturbing, mootling, ploughing, tumping, rooting, digging and upturning.

Boar move according to internal motivations and external, environmental factors, though foraging is believed to be a central force (Morelle et al. 2015). Why boar follow their noses into Dean settlements with such annual regularity is unclear- the FC do not carry out research into their behavioural ecologies. That said, they tell me temporal foraging patterns might be caused by their high density and that fluxing movements reflect the need for sounders with growing young to consume more

food than the forest can provide<sup>43</sup>. This idea certainly has some traction among residents, and feeds into a breadth of related ecological theories. People I interview variously suggest it could be the softening of grassy spaces that offer easier access to invertebrates (Andrew, resident); the activity of leatherjackets, daddy long-leg larvae, which hatch in late July and August to lay eggs (Neil, resident); less risk averse sows becoming more confident and taking maturing piglets beyond the safety of forest space (Mike, resident); or else roaming males and bachelor groups thrown from their sounders (Anthony, wildlife management). Critically, most interviewees also implicate residents who encourage boar from the forest by deliberately feeding them, something that particularly concerns people worried about disease transmission through infected foods, such as Alexandra and Joseph (agricultural stakeholder representatives). Alternatively, there are also suggestions FC culling practices create perturbation of boar into villages spaces (Ian, Mike, Tim; residents). What is certain, however, is that upturned soil becomes a key actant mediating human-boar relations around the Dean.

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<sup>43</sup> This view reflects the calculative biopolitics discussed in Chapter 7, whilst Chapter 8 further considers how FC knowledges are contested within local politics.



*Figure 22- Foraging through an area of forest waste adjacent to Yorkley*



I regularly bump into Andrew while walking and his feelings represent well the views of other interviewees negatively affected by boar foraging. He is a good talker and from our first encounter bent my ear about Dean history. Insignificant paths to me were steeped in meanings for him. One day, as I accompany him during his daily walk through the forest to collect his newspaper, we end up at a patch of forest waste on the edge of his village rooted by boar. “That’s the crap I was telling you about” he exclaims, “the same boar as down there I reckon”. He sketches virtual boar movements from the forest to the ground beneath our feet, linking hoofprints and sloppy boar dung we had seen earlier. “A big old bugger” he says, “reckon I saw him a weeks back”. Like many residents, his knowledge is combined from his own experiences, everyday conversations and some official representations of boar. Through the months of senescence, it becomes easier for residents such as Andrew to narrate signs of boar activity on account of the visible traces that flow between the forest and villages. This disturbance has left Andrew frustrated:

*I've already put it back two or three times, this patch. This is all being ripped up, right the way through. This used to be real flat ground. Barry over there (points to house) used to come out here with a mower and keep this grass nice and tidy but now you can't do anything... he just gave up. I have done it a few times over the last few years, and it just happens again. You can't possibly keep up with them!*



*Figure 23- Two snapshots from the filmed go-along with Andrew. The first shows foraging on a patch of forest waste adjacent to the forest edge. The second shows foraging in some forest waste within the village itself.*

As much as Andrew has his quotidian rhythms, it appears boar in the Dean also have their own. According to ecologists, they develop spatial memories through a combination of ambient, atmospheric cues, and internal, 'idiothetic' information recorded through mobility and embodiment (Morelle et al. 2015). Following their noses, exploring for food, they it is apparent they regularly return to the same places or follow similar routes and paths around the Dean. In some places they root deep, whilst elsewhere they softly probe at the surface with their snouts, the combination of which leaves few grassy spaces appear untouched, at least in the eyes of people who find this unsettling. Further up the village, the road verges have been disturbed as well as the waste. Both Andrew and Margaret, another resident I see tending to these a few mornings later, comment on this:

*After a while, you think why am I doing this? The boar do it at night, go back in [to the forest], then in the morning you see what they've done again. Day after day...You wake up waiting to see what they've done.*  
(Margaret, resident)

Residents who are negatively affected by the aesthetics of boar foraging appear emotionally fatigued by this repetitive transformation. The issue of 'mess' makes boar awkward to live alongside. As Margaret alludes, summing up the thoughts of many participants, such activity can feel like a daily occurrence, a circadian rhythm whereby boar stay in the forest during the day and enter the villages at night. Waking in the morning might be accompanied by a negative anticipation that they've returned and experiencing feelings of frustration and anger if they have. Replacing turf seems futile, generating a sense of hopelessness in the wake of autonomous boar behaviours.

Responses to foraging, however, are polarised and certainly not always deeply felt. One morning, interviewing Rob, a resident enthused by boar, he points out of his front window and tells me, laughing, "it's a bit of a mess out there!" His house is right on the edge of the forest with a large, flat area of waste on the other side of

the track. Rather than upsetting, Rob finds their presence affirming, commenting “when they are rooting near my house, I think ‘great, the boar are around’”. For him, it is a sign to go out and look for them, or “keep an ear open” in the evening when they are likely to return. “They often see to come back for a few nights if they haven’t been seen off by someone”, he says. This sentiment is shared by several other residents:

*We all know they can moot everything up...but you have got to find a point where you can just live and let live really. It is just some digging.  
(Ian, resident)*

*I have got less sympathy with people who say it looks so unsightly...my view is, well, it's a forest! (James, resident)*

Whilst these and other like-minded residents agree that “in an ideal world” (Ian) boar wouldn’t forage in settlements, they appear relatively unaffected. Tolerance for boar and their physical place-making, therefore, varies. Though all participants concur the Dean ‘is special’ because of its closely integrated forest-village landscape, understandings of how humans and nonhumans should be spaced diverge. For people with a more eco-centric ethic, autonomous animal movements are accepted as part of a continuous, multispecies landscape; “The villages are part of the forest...it’s a place of wild animals...we need to adapt to them, to what they do” (Tim, resident). But for others, foraging geographies are not merely aesthetically messy acts of wildness, but ones that also unsettle cultural attachments.

*We’ve tried to keep it tidy, but its soul destroying. People might say, ‘but it’s only forest waste’ or ‘it’s only verges’, and I understand. But this is part of the forest. It is about what the forest was and is...the sheep graze it...it keeps the forest open...it’s tradition. (Andrew, resident)*

*Our houses used to back on to the forest. There wasn’t really a fence... So, we’d look after the grasses outside like it was a part of the garden...That’s why those diggings make people upset. (Neville, resident)*

*I used to love the forest. People admired us and our villages. We were told the forest was beautiful. But now I am ashamed...embarrassed! The place has become ugly! The boar are destroying the villages...its not a place I want to live. (Resident at a council meeting)*

Waste, the verges and greens, therefore, are not just empty space, but are saturated with a sense of the Dean. Firstly, they have an important role contributing to its aesthetic, something 'tidying' seeks to maintain. As other work has highlighted, rewilding can be aesthetically challenging, 'unscenic' and 'ugly', disturbing values and practices that promote 'neatness' (Prior and Brady 2017)<sup>44</sup>. This applies as much to everyday landscapes as those territorialised for rewilding practices. Secondly, as Neville suggests, forest-village boundaries were historically fluid, meaning care for one's own property spilt, and still does, beyond private borders. Boar, however, have inverted and exploited this fluidity in unruly ways. If we consider the Dean as an active, lived 'choreography' (Edensor 2010b), where familiar practices and routines are continually 'binding' actants to place (Ingold 2011; Tsing 2015), then boar rooting appears more affectively disruptive. By foraging in settlements, therefore, boar are not merely churning materials, but also attachments integral to meaningful Dean practices.

There is a further point. Boar disturbance reminds some people that the forest and waste "used to be full of sheep before they were culled" and which "kept the bracken down...let the grasses grow" (Neville, resident). Neville's nostalgic comments, reflecting those of several other interviewees, highlight that boar mess is not merely a present matter, but that it might also evoke memories of the past, in

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<sup>44</sup> Prior and Brady cite Saito (1998) who proposes the term 'unscenic beauty'.

this case, the foot and mouth epidemic in 2001 which resulted in 6000-8000 forest sheep being culled. Sheep, a historic companion in the Dean who kept the grassland 'tidy', seem to have been partially replaced by a messy, 'monstrous' wild Other (see Lorimer and Driessen 2013). As boar establish new geographies inscribed with their own memories and associations, they disturb the 'layers' of meanings embedded in personal and collective narratives that make up Dean naturecultures (Drenthen 2018).

Though the Dean is dynamic and in constant flux, like most places it is felt as relatively static, consistent and knowable (Amin and Thrift 2002; Edensor 2010b; Ingold 2011). However, boar rewilding has abruptly ruptured temporal understandings and rhythms, disjoining the past from the present and imaginaries of the future. The speed of this shift is important, and David (ex-government worker) suggests "it's almost like a shock treatment. People are not used to it (the foraging)... now we have it all over the forest, and in a relatively short period of time." Whereas rewilding sometimes promises gradual change, nonhuman (re)introductions can make this rapid and disorientating (Prior and Brady 2017). For some residents, then, the sudden choreographic changes and new actants have dislocated their relationship and understanding of the more-than-human Dean, seemingly generating "a sense of loss" (O'Neill et al. 2008, p.39) and ontological insecurity.



As well as aesthetics, boar foraging also disrupts human practices and mobilities. "Mooting" along paths makes some people uneasy, something I witnessed walking with Andrew and Margaret who commented on their feelings of vulnerability. However, pavement foraging is also risky for boar. Though studies elsewhere suggest boar themselves might adapt to traffic intensity to minimise risk (Thurfjell et al. 2015; Stillfried et al. 2017b), accidents have increased in the Dean, most frequently in autumn, and often during darkness. Many interviewees tell stories

similar to Lorraine's of hitting, or nearly hitting, boar, affective events leading to concerns about driver safety, as well as animal welfare:

*I was going quite carefully, and saw this kind of black shadow by the road...then, DOOF! I just hadn't seen it was a boar...they are low...their eyes don't really reflect the headlights like deer's do...I felt quite upset...the boar probably went off and died. (Lorraine, resident)*



*Figure 24- Dead boar I encountered as roadkill.*

A different tension emerges when boar utilise spaces specifically bordered for human activities. Regularly throughout the year, though particularly during months of senescence, stories circulate local press and by word of mouth about foraging in sports fields and other amenity spaces such as playgrounds. This, once again, elicits multiple affective and emotional responses among residents: some voice anger towards boar, though most raise questions about human responsibility to prevent such events happening<sup>45</sup>. However, rooting in several spaces of particular cultural significance generates a specific tension. In October, I drive to Parkend, park my car near the inn and make my way up towards the church. I open the cemetery gate, go inside, and close it behind me. Three people over to my right are chatting intensely, looks of concern on their faces. One of them turns and acknowledges me. She is on

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<sup>45</sup> The theme of responsibility is addressed in more detail in Chapter 8.

her knees, poking and padding at the ground. I can't hear them, but I know their topic of conversation. Making their way into the cemetery a week or so previously, a sounder of boar had patchily dug up some of the lawn around the headstones and graves, and then returned on following nights.



*Figure 25- Parkend cemetery after boar disturbance*

The activity not only disrupted the emollient atmosphere of this cemetery space but caused Dean-wide dismay. Local press covered the event, offering an array of emotional quotes. One councillor described how the graveyard now appeared “more like a World War One battlefield than a serene and peaceful place”<sup>46</sup>. Though upset, the local Reverend who I’d seen patting the grass back, assured in the paper that there was “no suggestion that wild boar have been trying to dig up actual graves”<sup>47</sup>. However, this was not an isolated event, and later in the winter

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<sup>46</sup>

<http://www.theforestreview.co.uk/article.cfm?id=104824&headline=Churchyard%20hit%20by%20boar&sectionIs=news&searchyear=2016>

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<http://www.theforester.co.uk/article.cfm?id=101625&headline=Wild%20boar%20devastate%20Parkend%20church%20graveyard%20-%20again&sectionIs=news&searchyear=2016>

boar entered another cemetery in Cinderford with similar results<sup>48</sup>. Such events were often brought up in interviews and, once again, reveal diverse sentiments:

*It's very concerning. These places are really emotional. They're important to people...it makes us worry about the future, about what the Dean is becoming. (Gary, councillor)*

*Look, it [the reaction] really pisses me off...The digging's undesirable, but as much as I rate boar intelligence, you can't tell me they should know the difference between a grassy cemetery and a field. It is just another stick to beat boar with. (Neil, resident)*

Boar are naïve to the meanings embedded in certain places and landscape features. Though many residents, such as Neil, apply a boar-centric logic to rationalise their foraging- 'thinking like a boar' to paraphrase Bear and Eden (2011)- for some people it is also becomes a moral matter. The events at the cemeteries provoked anger as boar appeared to defy social and moral codes. This highlights something specific to boar behaviour, namely, that rooting does not just create messy aesthetics and cultural landscapes, but it also potentially disturbs the past. Digging, quite literally, reveals buried matter which, in the case of the cemetery, is rich with emotional and cultural value<sup>49</sup>. Such behaviour, therefore, has a multi-temporal affect, connecting the certainty of ancestral pasts with the uncertainty of wild futures. By making such projections through what Prior and Brady (2017) refer to as 'ampliative imagination', Gary and other likeminded participants create a narrative

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<sup>48</sup> <https://www.bbc.co.uk/news/uk-england-gloucestershire-38755729>

<sup>49</sup> In nuclear fallout zones in Japan and eastern Europe, boar digging has meant many animals have high levels of radiation, leading to a variety of biosecurity concerns (Škrkal et al. 2015; Fuma et al. 2016).

of future cultural degradation. Bo(a)rderlands, therefore, are not just aesthetically messy but for some actors, morally transgressive.

### **6.2.2 Visible encounters**

As well as their traces beyond the forest, during senescence boar become more visible within the forest. On a warm, winter's morning, I drive with my windows down, partially blinded by sun splaying through the leafless canopy, towards Neil's house. As I arrive, he is ready to disappear into the forest, clad head to toe in camouflage gear. He goes out almost daily, one of many residents who are also enthusiastic wildlife photographers that roam the forest. As well as Neil, I also walk with Nikki, who wanders regular loops hoping for "chance encounters"; James, who sometimes sits patiently in a certain place for hours at a time; and Simon, who appears to blunder through vegetation seeing what pops out.

All these participants actively seek boar encounters. In preparation, they utilise a variety of technologies including DSLR cameras and telephoto lenses (which double as binoculars); camouflage clothes and sturdy boots; or sometimes hides constructed of netting, artificial leaves and khaki tarpaulin. Unlike myself, they do not require maps or GPS. Their experience and emplaced knowledge mean they know, to varying degrees, the forest beyond the delineated tracks and footpaths represented on maps. Knowledge of tree stands, individual trees, desire lines, topographies and ground firmness, amongst other markers, have all become part of their forest place, learnt through embodied practice and an attentiveness to more-than-human elements, especially within their 'patch'.

Neil and I stroll up a steep forestry path, beads of sweat slipping from his greased brow. "I thought it seemed like a good idea to go in my full-on winter gear", he opines. It wasn't. It's unseasonably hot. After a while, as the hard forestry track flattens out, we turn into the vegetation, straying from the usual lines that map and

regulate human activity in the forest. Crossing this physical and psychological boundary, we head towards a wallow tucked away only metres from the track- a sloppy, pale brown basin full of chocolate coloured water, poached repeatedly with hoofprints. Wallowing is an important activity for boar and serves multiple purposes, notably, to regulate temperatures to make up for a lack of sweat glands (Keuling et al. 2017). Furthermore, it is often followed by tree rubbing, something that cleans parasites off and communicates presence through olfactory marking.



*Figure 26- Snapshots from my go-along with Neil. The first is along a forest track with bracken either side, along which we had seen signs of boar. The second is at the point when Neil and I squat as a boar sounder walked just in front of us.*

I follow Neil's eyes tracing smears of mud on grass to a couple of conifers, muddied brown and with smoothed bark from habitual rubbings. It is winter, so the bracken is dead. Neil explains this makes it "the best time of year to be out because...you actually see things and can see where they're going. In summer, it is almost impossible". The dying bracken and leafless broadleaves alter the atmosphere of the forest. It broadens in spatial scale, visibility improves, sounds carry more clearly. It's easier to notice movements at a distance. Furthermore, the soft soil reveals animal tracks that criss-cross forestry paths and lead into vegetation. Anticipating where animals might be is easier, meaning space can be negotiated in different ways.

Our conversation thins and our steps change, softening and slow. This is Neil's patch and he knows boar might be near. He knows a male that often wanders around here, along with a couple of matriarchal groups that use this area for foraging and resting. Sounders are not territorial, so to speak, and they often share space with other individuals and groups, particularly ones that are related (Podgórski, 2013; Podgórski et al, 2014). That said, they are also loyal to benevolent, secure environments, something most Dean residents have begun to learn. Certain forest locations are now, in Nikki's (resident) words, "boary". Neil tells me this place is perfect- few people come up here (though this is clearly not requirement for boar), there is a good mix of deciduous trees with bracken understoreys for feeding, and some conifers nearby where they sometimes disappear. Until the FC started to increase their felling, he says, the boar had learnt good places to hide away.

As we edge forwards, Neil suddenly grabs my shoulder and pushes me down. Just down the slope, we see a sow, seemingly oblivious to our presence. We lie, motionless, but it is difficult to get a sense of how many there are- perhaps a couple of adults and some juveniles. I just sense a blur of movements, very close, but

mostly obscured behind bracken. We wait, watching and listening to them shuffle and rustle through a filter of ferns. Then they move out of view, below our line of sight as the undulating ground dips down. My heart thumps hard in my chest and I breathe heavily, but quietly. Waiting momentarily longer, we ease up, slowly shifting body weight and muscle. I watch Neil as he looks around, eyes scouring through trees and across understorey. He turns to me, broad smile and visibly happy. "I think I know where they might be heading". And with that, his movements change, from sedate to energetic. I follow, heavy footed, less balanced, as we arch around to try and intersect the boar.



*Figure 27- Snapshots from a go-along with James. We saw a single male boar twice. Both times he ran off immediately into the dense conifer plantation around which we walked.*



Neil's habitual boar tracking is clearly not the norm and he belongs to a select public who deliberately seek affective wildlife encounters. However, his comments on seasonality reflect those of other residents who mention autumn-winter senescence increases visibility. Most people, even interviewees who don't feel boar belong in the Dean- for example, Lorraine, Margaret, Graham- admit they are curious when they see them, as long as it is at a comforting distance. Winter visibility, therefore, carries an increased sense of security by stretching space and, effectively, slowing time: "You might see them when they are a way away, and you can both avoid each other...everyone (boar and humans) is less panicked!" (Graham, resident). The life cycles of vegetation in the forest, it appears, are critical to the relational atmospheres of encounter, not just for humans, but also for boar.

However, boar movements beyond the forest widen the geographies of possible encounters. Andrew (resident) tells me meeting boar in the forest usually doesn't bother him, even at proximity, because "they are generally more frightened of people" and if you "keep your wits about you, they are usually no problem". However, after incidents near his house, he feels boar "loitering in the villages are a concern", reflecting the view of many participants. Neville (farmer), for example, also tells me about an expected encounter for his wife who had gone out in the evening to return the chickens to their coop but had been confronted by a male boar:

*standing there, head through the fence, grunt, grunt, grunt...it was the biggest boar you have ever seen in your life! The bugger was trying to get in...good job my wife saw it before going out, otherwise...*

Encounters elicit different responses, but it is unpredictability that makes them feel risky. Boar in the villages are, in Andrew's words, "a menace", because you are unlikely to be using your 'wits' and are less alert. They potentially generate feelings

of what Lorimer (2007b) calls ‘dissonance’ as affective encounters are perceived to be out-of-place (Philo and Wilbert 2000a). This, therefore, is one way in which boar have disturbed the Dean, by making both forest and villages feel less benign and uncertain with the incipient possibility of risky meetings.



*Figure 28- Collection of photographs from trail cameras during months of senescence*

### **6.3 Emergence**

*In the New Year, still winter, the forest remains muddy and damp. In some places, it turns ever sloppier from thawing frosts. The weather, as always, is mixed.*

*Sometimes the sky is a fug of thick cloud, a dulled wash of grey-white. Otherwise, it might remain brilliant blue from morning until sun-down, or else settle with clouds once the cold of night dissipates. And then there are those rare days when the sky seems to glow white and haunt with the possibility of snow.*

*Surprisingly, some leaves still hang desperately to spindly beech saplings, and the odd green stalk of bracken persists amidst dead fronds. The only vivid colour on mature deciduous trees is the green of ivy or moss that sometimes grows on thick, water slicked limbs. The forest floor has thickened with dark red and brown leaves, mulchier than before as the moist air sogs them through. Laced throughout are desire lines, now well-trodden paths that reveal habitual animal lives and repeated movements. Occasional craters of claggy clay soils pool with water run-off, revealing slipping hooves and sliding bellies.*

*Gradually, however, temperatures begin warming, and the forest slowly regenerates. Days, imperceptibly at first, grow longer and the blue of twilight lengthens. Incrementally, there is more bird song from trees. On the ground, woodcocks settle on territories, and dunnocks pick for nesting. And from the brown, soft soil, forest flora patchily sprouts. Bracken stems unfurling, grasses shooting.*





*Figure 29- Emergence in the Dean*

As new life emerges and the forest begins to shift, so too do boar mobilities' and habits. Though they still move into villages, this gradually decreases as winter turns into spring. Therefore, the general focus of this subsection shifts to the forest. Emergence, primarily, shows how forest experiences and relations alter upon the arrival of piglets, something that usually occurs in the first few months of the year. It considers how the atmospheres of encounters change as boar family dynamics shift, and the ways in which these transformations are negotiated.

### 6.3.1 'Humbugs'

I arrange to interview Ian at a nature reserve. Around the back of the visitor centre I find him and Simon sitting on a wobbly bench. As we begin talking another man, Mike, arrives and joins our conversation, jovially greeting Ian with a joke about him sleeping in the bird hide. Mike is a “born and bred” forester. Ian and Simon have lived here since they were boys, though, they point out they will never be accepted as true ‘foresters’. In the Dean, histories matter. We sit and talk in the chilly air. Our conversation is littered with memories and stories of boar encounters that spark off one another. They have known each other for years and share their knowledges of the forest, its multispecies lives and changes. As we talk, we often return to a key event that punctuates the year: the arrival of ‘humbugs’.

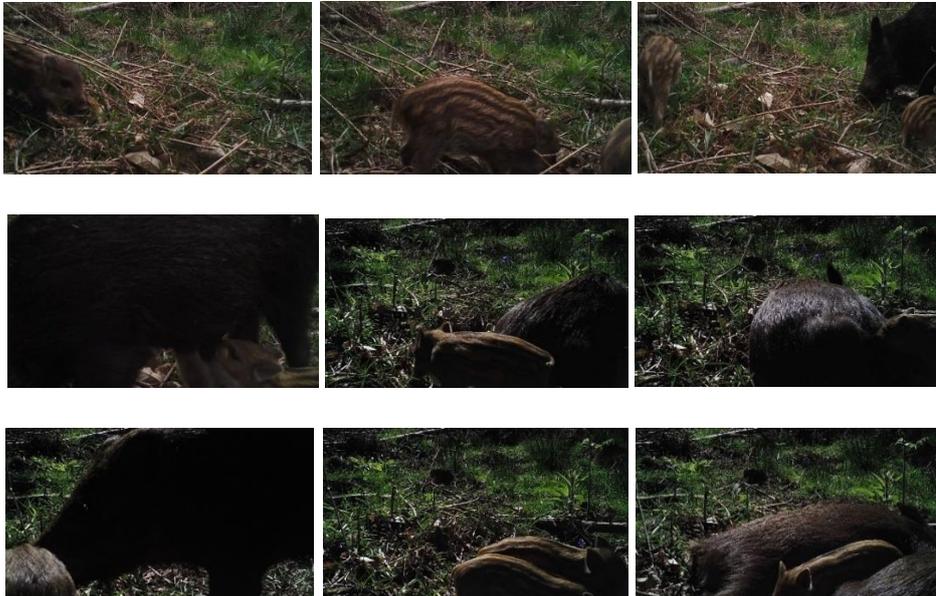
From late January through spring, boar dynamics shift as sows have piglets, though occasionally they have them at other times of the year<sup>50</sup>. Sounders are usually multi-generational and matrilineal associations of mothers, sisters and young from different years (Podgórski et al. 2014). As well as what I believe are two sounders in my patch, my camera traps show bachelor groups of bristly-spined, adolescent males, sometimes joining mature males, who have left sounders in autumn when females become ready to mate. Sows in gestation appear to absent themselves from sounders and find places for farrowing, gathering sticks, grasses and other materials to make nests tucked away in thick vegetation<sup>51</sup>. Upon giving birth and

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<sup>50</sup> Females can have more than one litter and may do so if their first litter do not survive. This leads some residents to believe it is the norm for females to have two or three litters, when it is usually a contingency. However, I have seen mothers with piglets in autumn, presumably on account of this,

<sup>51</sup> Though didn't find any obvious nests in my patch, I did, however, observe one on a walk elsewhere in the forest. It was situated under a large fir tree, where the ground dipped away to create a secure, obscured basin on the edge of dense conifer regeneration.

spending some time alone with their young, perhaps for a few weeks, mothers will often re-join their kin groups, or occasionally other females with piglets, giving the impression that individual mothers might have huge litters.



*Figure 30- Series of photographs from a trail camera capturing sows and piglets socialising and suckling.*

The arrival of ‘humbugs’, as residents call them due to their striped appearance, brings a new set of human-boar relations:

*You know, you can sit for hours watching the piglets play. If you see about 15 or so out there, just rolling around, toying, you can spend all day there. (Simon, resident)*

*They are fascinating, you can get quite into them...addicted to learning about them, to see them more, to understand what they are doing... I was out and came across some little piglets. They were small, not bigger than that (he gestures a small size between his hands, little more than a foot). It was just like they were little clockwork toys, where somebody had wound them up and they were just going double speed, their little legs were going (he whirrs his hands) and they were, like, playing with one another. It was just fantastic to watch. (Mike, resident)*

This exchange brings to light the affection with which many interviewees speak of piglets. Observing boar, and piglets especially, is an affective experience that makes the forest feel different to elsewhere. Importantly, it is not just eco-centric, wildlife enthusiasts who enjoy seeing ‘humbugs’, but residents more generally, even those wary of boar. Lorraine describes them as “very cute”; Robin says they “make him smile”; even Kevin finds them “charming”. Boar and piglets, therefore, generate different forms of ‘nonhuman charisma’ in relation to different types of affective encounters (Lorimer 2007b). Piglets appear to have a certain ‘corporeal’ and ‘aesthetic’ charisma which draws people in. But multigenerational sounders are also charismatic. They are highly social, co-operative, tactile and communicative (Morelle et al. 2015), and witnessing their complex, interactive worlds appears ‘alluring’ (see Brettell 2016). This is not just visual, but multi-sensory, as shown in the exchange below:

*Ian: You learn things like why they call. They have got like a language of their own, they grunt, and they snort. The mothers make noises and they will take them away or go somewhere, and they know exactly what they are doing.*

*Simon: They'll be doing something, and then as soon as a sow or the sows have had enough, they would do a snort and then those things are gone, fsssshht! They respond like lightning...(laughter)*

*Ian: Or maybe you get one that won't go for a bit, he hangs on, and then shoots to catch up (laughter). You know, they are very intelligent animals.*

Not everybody discusses boar charisma in such multi-sensory terms, though many residents comment on the close, intimate relationships between mothers and young. A certain degree of attentiveness stems from habitual routines and spending slow time in the forest, lingering patiently for wildlife or meandering on walks. It is about ‘learning to be affected’ (Despret 2013) and immersing oneself in the relational, affective aspects of boar ‘atmospheres’ (Lorimer et al. 2019). Other wildlife enthusiasts speak in similar terms:

*Neil: ....unless you are out there listening to them, you cannot describe the noises they make. You get the warning, the alert snort. The single, deep guttural alert. That's very noticeable. Not just because of its depth of gut sound, but because they all leg it! You've got an alarm, which is less guttural, where it is about, 'what's going on'?*

*Kieran: So, it is multi-sensory?*

*Neil: Yes, it's the chattering of sows and piglets. It's the hum, phnow, scherp (he imitates some boar noises). It's sort of this guttural rumble of a content animal. And I've laid in the bracken, listening to this going on around me... I can hear them even if I can't see them. And I leave there with a massive smile on my face... and they don't even know I've been there! And I come home and I'm happy and I'm content.*

The allure of learning through observations, and of spending time in proximity to boar is clear. People talk emotively as they fondly recall memories, whether expressed through awkward smiles (Simon) or wild gestures (Neil). This appears to reflect the 'enchanted' power of rewilding that enthuses advocates (Monbiot 2014; Lorimer 2015) and, indeed, attest suggestions encounters can, though not always, generate more affirmative and ethical relations (Haraway 2008). Importantly, residents who are outwardly being attentive to boar worlds appear to generate, and are generated by, an ethic of care and concern that other residents don't value their nonhuman subjectivities. Neil tells me, "[p]eople don't realise...boar are always thinking", while James (resident) similarly explains, "people miss out on all this stuff...how they interact, communicate...use the forest. Boar are really intelligent, but some people just see the digging". Some residents, it seems, feel their intimate observations reveal a deeper understanding of boar and are concerned others overlook their difference, though this can be misguided.



Whilst most participants are appealed by piglets, some are more conflicted by their emergence in winter-spring. Jacky is someone I occasionally see around my patch

and who walks her two dogs every day. On one occasion we bump into one another and Jacky asks if I had seen the sow with piglets “spending time” near the bottom of the footpath, by the entrance to the forest. I hadn’t, but I had noticed the small, pointy hoofprints leading into the bracken. She tells me boar don’t bother her too much in winter but adds “the piglets change everything”. Now, like many other people I interview, she is wary of protective sows and has changed her walking routines as she doesn’t “want any trouble”. Interestingly, Jacky asks:

*“Did you smell her back there, near the entrance? She is still about, close by. I think the dogs picked it up too, so that might be why they got nervous with you too...That’s why the dogs are on the lead”.*

A few minutes earlier, I too thought I had smelt boar- the strong, musky scent of wild animals and geosmin<sup>52</sup>. It is not only the wildlife enthusiasts who are ‘affected’ by the multisensory traces in the forest, but other habitual forest users, like Jacky, who might occasionally pick up on scent and actively avoid encounters. Her sensitivity to an invisible smellscape highlights that the affective and sensory nature of being in the forest helps an array of residents partially attune to more-than-visual cues. Learning about boar places and movement, therefore, is not only the domain of ‘enthusiast’ residents or wildlife managers, but can be acquired, to a degree, through quotidian routines. For many residents, changing boar familial dynamics alter their sense of security and risk. Whilst quiescent vegetation makes the forest more open and predictable, the arrival of piglets counters this. Going out at this time of year to walk her dogs, Jacky says, makes her “slightly anxious”.

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<sup>52</sup> Geosmin is a chemical made by eukaryotic organisms living in the soil, which omit the earthy odour associated with mushrooms, fungi, and soil itself.



*Figure 31- Snapshot of my 'tracking' just before I met Jacky.*

Jacky's concern about encountering sows and piglets is shared by other residents. Stories circulate widely around the forest by mouth and media, speaking of the risk presented by mothers, as well as the care required when negotiating boar movements at this time<sup>53</sup>. During interviews, Robin (resident) tells me about a time a sow ran towards him "huffing and puffing" and Alan (councillor) explains how he "got stood up by a mother" who was "snorting... and coming very close". These usually bluff charges achieved the intention of making a threat to boar, in these cases Robin and Alan, fearful. But it also highlights how boar defensiveness and aggression are blurred and subjectively experienced by residents:

*Normally they run off, but if they have young, they're more likely to stand their ground, like any mother does, and then they are an issue. I just give*

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<sup>53</sup> After I had completed my fieldwork, there was a story regarding a dog walker whose finger was bitten off by a boar. <https://www.gloucestershirelive.co.uk/news/gloucester-news/wild-boar-bit-part-finger-1042049>

*them a wide berth if I know they are around...if I see their signs everywhere. (Adrian, resident)*

*I know, obviously, there are debates and concerns about the boar and whether they are aggressive or not...[in] the normal breeding season they are going to be naturally defensive of their young...when I saw that sow I told you about, I just said 'ok, do what you want to do', and turned around and went home. (Tim, resident)*

Sows with young are generally deemed riskier and less predictable, requiring space to be negotiated in different ways. This might be through changing routes in advance, or by taking extra caution in the forest. Avoiding unwanted encounters, therefore, requires flexibility and anticipation. This might be through altering habits in advance, or else through a more intuitive, situated sensing of the surroundings and noticing the cues that boar might be around- the prints, tracks or dense conifer plantations. Vigilance, therefore, is enacted through an emplaced knowledge of the forest, familiarity with boar and the temporal shifts in their ecology.

### **6.3.2 Disturbing annual 'spectacles'**

As well as new boar arriving in winter and early spring, vegetation in the forest begins to emerge and green. Boar appear to forage less in the waste and villages and instead find nourishment from the forest. Their geographies shrink and by mid-spring the traces through villages are mostly the hardened remains of activity earlier in the year. Thistles, grass and herbs grow through upturned soils and begin to green the 'mess' of past foraging. In the autumn, people had told me 'the digging will be forgotten by spring' and, indeed, stories of tensions in villages generally ease. However, human-boar relations are rarely smooth. For some residents, issues with foraging persist, though this time in relation to what boar are consuming, rather than where.



*Figure 32- Bluebells growing in a patch of mature woodland close Speech House*

Depending on temperatures and the emergence of spring from winter, at some point in April-May areas of the forest begin turning purple with *Hyacinthoides non-scripta*, or bluebells. These tend to flourish in deciduous trees stands and, in some patches, blanket the forest floor around mature oaks and hornbeam. For many residents, this is an eagerly anticipated time of year, an annual rhythm of collective significance where people wander through lush shades of mauve and green. But boar have altered this nonhuman ‘spectacle’ (see Morris 2018). Diane is a friend of a friend and enjoys the forest with her kids for recreational purposes. In April, she tells me recent boar activity around Blakeney and Wenchford has been “extremely disappointing”:

*Diane: what they have done up there is terrible... I remember being a kid and seeing the bluebells up Blakeney every year. My grandmother said it brought the summer. Something nice, you know? And now you go there, they are destroyed by pigs.*

*Kieran: It has been dug up?*

*Diane: Yeah, completely. Ruined. Everybody wants to see the bluebells. I have friends who come from Gloucester, Oxford, who want to see them, but now it barely seems worth it. It is such a shame.*

Boar digging up bluebells is a long-standing concern (Wilson 2005). For Jo and many other residents, this is another aspect of foraging that has changed the forest and their relationship with its seasonality. Relations and attachments to place, it seems, have annual as much as daily rhythms that demark the year. Nonhuman life is bound up with aesthetic values that spawn human rituals and demark time. The bluebells not only represent how spectacular wildlife can be, but also reflect a certain idyll of the Dean as a beautiful, English woodland. Boar foraging, on the other hand, becomes the antithesis of this, turning the vibrancy and vigour of floral woodland colour into mud and mess. Diane's dismay was shared with some other residents I interviewed, such as Margaret, Lorraine and Robin.



*Figure 33- Patch of disturbed soil with bluebells*

Pertinently, not all people are affected by boar-bluebell relations in this manner, however:

*“If they (boar) affect it by reducing the density of bluebell carpets, so be it. That’s the natural state of affairs. The non-natural state of affairs we are*

*used to is swathes of bluebells. Yes, it does look lovely, but it isn't a natural condition for that ecosystem. (David, government agency worker)*

*When you take out boar, certain species do well. Europe doesn't have these monocultures of bluebells, because they have boar...Of course, I like the bluebells, but we need to accept ecological changes.... (Darren, ecologist)*

There are, once again, competing understandings of the forest, ones embedded in differing conceptions of place, identity and landscape 'authenticity' (Hourdequin and Havlick 2016; Prior and Brady 2017; Drenthen 2018). For some people, bluebell blankets are a 'non-natural' ecological occurrence unique to the UK caused by unbalanced faunal-floral relations and, significantly, past boar extirpation. This ecological logic is grounded in a deep temporal 'horizon', but also an understanding that bluebell rooting will flux and grow back. Regrowth, however, tends to happen patchily and incrementally over subsequent years (Harmer et al. 2011; Sims et al. 2014). This, on the other hand, jars with Diane and many other residents who feel bluebells rather than (re)introduced boar belong in the Dean. Holding a shorter, situated 'horizon' of belonging means such disturbance is not just framed ecologically, but as an event that churns cultural associations made with the forest:

*They are part of what spring is about. You go to see them with friends and family. My kids love them. They are important to people...I have memories. And now they are gone. Or, perhaps they will be gone soon, if the pigs keep growing [in population].*

Bluebells, therefore, do not merely represent woodland flora, but are steeped in personal meanings and symbolise affective attachments with the forest itself, and other social relations. Where once their rhythmic arrival sowed memories and the anticipation of imminent summer months, now they reflect the destabilising presence of boar and uncertain forest futures.



Figure 34- Collection of photographs from trail cameras of boar during periods of emergence

## 6.4 Verdance

*As spring transitions into summer, the forest billows with life. Bracken grows tall in dense carpets, brambles bulge in huge knots and young spindly birch flash pale leaves. The high, green canopies of mature oaks, beech and sweet chestnuts patchily shade the forest floor, where saplings grow in light and herbs and grasses cover the hardened soils. The forest feels more vertical.*

*Days are generally warm though sporadic periods of heavy rain and drizzle punctuate dry spells. The forest cools on hot days, while open areas of heath and grassland can feel stultifying. In the middle of the day, animal lives settle- birds save song and mammals disappear into thick veils of vegetation.*

*The ground is firm: forest tracks and paths are generally solid and once wet patches of mud have mostly baked dry. In the surrounding villages, there is little evidence of boar, and the verges and greens are largely grassed over. The hoof and paw prints of animals are those from months gone by- recent movements leave few tracks. Whilst desire lines still lace the forest, they are less obvious than in autumn and winter as vegetation springs back or grows over forged paths. Shaded patches where water is still pooled on clay soils betray animal presence- sometimes just prints, at other times eruptions of mud displaced by bodies and rubbed on the trunks of trees.*





*Figure 35- Collection of photographs showing the forest in verdance.*

This subsection considers how boar relations disturb and transform pre-existing human-nonhuman relations and understandings of nonhuman wellbeing and security. Verdance, as with other periods, also sees a shift in human experiences of risk. Therefore, the subsection also attends to the ways human-boar encounters are altered by the changing visibility and relational agencies of the forest.

#### **6.4.1 Disturbing ecologies**

From late spring to early summer, boar seem to stay within the vegetation. The piglets are at a mixed age- those born early in the year now grow scruffy, tawny coats, whilst younger ones are still striped golden yellow and brown. The size of maternal sounders is also diverse, but the numbers of young decrease: some piglets die.

On a windy summer day, I shadow a representative of a local wildlife NGO, Nick. We have met a few times before and when we meet at his office, he is spinning plates. Nick needs to show a contractor a job, so we get in his 4x4 and head out into the forest. As with other conservation NGOs working in the Dean his reserves are on FC land, though there are often no obvious borders that demark conservation space from the commercial forestry. Like the villages and forest, everything is open and fluid.

We drive along a busy road through the forest before turning off and crunching along a dusty gravel track towards an area I know quite well. Pulling up at a crossroad, I leave Nick with the contractor as they gesture and imagine their future landscape. I kill time, buffeted by the wind that gusts across the open patch of forest in front of me, shaking heather. Looking around, I notice a muddy ditch just off the track indented with boar hoofprints. I re-join Nick and we walk down a gorse and heather lined path, Nick confirming this is, indeed, a good boar spot. The thick, scrubby vegetation is ideal for sleeping undisturbed, as well as to root around in. Nick describes himself as a “generalist” conservationist, much like boar, and is interested more broadly in habitats and spatial ecological relationships, rather than specific species. We trample through small heather bushes away from the path to an obscured area without vegetation and with up turned soil:

*This is what we want. We sometimes use tractors and diggers to make scrapes in certain places, and the boar do the same job, but naturally. They are good, they used to be here...it is good they are mixing things up.*



*Figure 36- The first photo shows the results of past digging in an area otherwise thick with bracken, gorse and other vegetation. The second shows fresher digging nearby in some shade, where the soil was softer during the summer.*

What would have been an indistinguishable patch of dense bracken, gorse and heather, like the rest of this area, has been partially transformed by boar. Digging for nutrients in rhizomes and root systems has turned some of the ground to bare, open craters. Whatever smelt, felt or tasted good here, has been returned to repeatedly, dug deeper and expanded. Nick is enthusiast about these excavations because bare, muddy patches “are good for insect diversity...[to] rejuvenate the soil...they bring new plants up...good for birds”, feelings mirroring those of other interviewees who believe boar ecologically enrich places they inhabit:

*Wild boar rooting within a landscape is an essential process for giving biodiversity a chance. They used to be here, rooting, and so it is important to have that back in the landscape...focusing on ecological processes, what wildlife does, rather than what it is,...and how things contribute to a larger system...is critical. (Darren, ecologist)*

*Walking through parts of the Forest of Dean...and seeing something natural happening there...not the result of some bloke with a chainsaw...but some other element of life there...having a measurable impact...is so enriching. (David, ex-government worker)*

Once again, as with the bluebells, there is an ecological logic that values relational boar agency and their ‘ecological engineering’ as they alter forest landscapes through foraging, the key argument for a more formalised (re)introduction (Sandom et al. 2013b). However, there is also an aesthetic appeal, as suggested by David, for digging is perceived as a ‘natural’ alternative to machines and equipment that mimic their effects. In other words, for many people, boar are associated for their ecological ‘authenticity’ and become valued for their functionality, for what they ‘do’, and the generative effects of their autonomous and unpredictable behaviours (Lorimer et al. 2015; Prior and Ward 2016; Svenning et al. 2016).



Throughout the forest are areas where bracken has been dug up and trampled, roots chewed and split by boar. Elsewhere, boar sift through top-soil and churn up bulbs, invertebrates and other root systems. Around deadwood, deep excavations appear like craters. These patches, according to ecologists, assist in the decomposition of leaf litter and organic matter by aerating soil and churning layers of detritus together, potentially shifting floral composition and stimulating the emergence of new ecological assemblages (Massei and Genov 2004; Barrios-Garcia and Ballari 2012). However, the results of these interactions can also be risky.

Interrupting the rhizomatic spread of bracken and other ruderal plants is seen as positive by those with a 'generalist' perspective on forest life, but there are other ecologically minded participants who are less enthusiastic. These might be understood as 'specialists' - groups or individuals who have emotional attachments to certain ecological niches and taxonomies. One of these is Alison, a Forestry officer. On a baking hot day, residents are out gardening and raking cut grass on lawns browned by sun as I drive to meet her a week or so before Nick. Some are also tending to the now grassy forest waste. Everything feels orderly- there are barely any traces of boar as I drive through verdant villages, to Dark Hill.

With her dog, we walk from the car park towards the trees. Dark Hill is an old ironworks and an example of transience and change- a crumbling brick ruin covered in bracken, brambles, and pioneer trees. As we walk, we are accompanied by melodious blackbird song, great tits tweeting and a raven kronk-kronk-kronking overhead. The bracken is tall and the vegetation close but, after climbing some barely legible steps, it opens out slightly and we pause.





*Figure 37- Snapshots from my go-along with Alison showing habitat important to butterflies.*

Part of Alison's annual work routine is to undertake ecological surveys focussing on butterflies and forest flora. This involves recording species' presence and numbers on repeated transects. Having observed changes over time, Alison tells me foraging by "the pigs" is negatively impacting important grassy forest habitats and flora, such as violets, upon which certain lepidoptera rely. She acknowledges that some species of butterfly are declining nationally but feels boar have accelerated this in the forest. Her concerns are echoed by Adam, an amateur lepidopterist who I also meet and walk with through some restored grassland on the edge of the forest:

*Take, for example, the small pearl fritillary. There used to be some important sites around the forest. They have quite a niche, but they were doing well. The grayling as well. Perhaps 15 years ago they began to vanish. Of course, there are other factors, but the boar dig up a lot of the important butterfly habitat, rooting up where they lay their eggs. It is frustrating to go back each year and see how much damage has been done, and then see the fritillary numbers falling.*

Alison and Adam's concerns echo those of other 'specialists' who perceive boar as risky and threatening to other nonhuman life. Philip, a herpetologist, takes me to an adder hibernacula he had been monitoring for a few years but had been disturbed by boar in the spring. He tells me how "awful" it was going to check after the winter and finding it dug up, with "bits of adders scattered around". Adrian, a keen ornithologist, has concerns about the extent to which boar affect ground-nesting birds such as nightjars and woodcocks. I also go mushroom picking with Sue, a fungi enthusiast, who points out areas repeatedly rooted by boar and worries important mycelial meshworks are being broken down, leading to the disappearance of rare species.

This, then, is one of the tensions of feral rewilding. Boar bring ecological uncertainty to the forest through their omnivorous diet and widespread foraging, something compounded by the lack of research by the FC. Nobody really knows what boar eat, but for some 'specialists', they have become a 'biothreat'. Their sudden return after a multi-century absence is disruptive; "Things have changed", Alison tells me, "since they first disappeared". Boar are deemed risky to lives valued for being, in the above examples, protected (pearl-bordered fritillaries and adders), charismatic (nightjars and woodcocks) or vital to critical, invisible ecosystems (fungal mycelium). Like species (re)introduced elsewhere, their arrival has brought concerns of ecological insecurity for other vulnerable nonhuman inhabitants (Barrios-Garcia and Simberloff 2013; Simberloff 2013). Autonomous boar mobility and foraging is deemed threatening due to their temporally asynchronous, or 'arrhythmic' (Lefebvre, 2004), presence, raising questions about the 'temporal thresholds' and ecological politics of belonging (Head 2016). Furthermore, whilst the concern for threatened species is often expressed as ecological, 'specialists' care deeply for already vulnerable species. Boar disturbance, irrespective of whether it is increasing precarity, is affective and fluxes with the seasonal impacts of boar foraging, as exemplified by Claire's (conservation NGO) words:

*...when you get nearer to surveying or visiting important locations, you are waiting to see how bad it might be...you do so much to help these*

*species...some are really struggling with all the environmental change...and then boar appear and threaten that.*

## **6.4.2 Intimate encounters**

In the spring-summer months of verdance, human-boar cohabitation re-orientes once more. Again, encounters occur in relation to broader forest transformations, ones that generate atmospheres of proximity. In mid-July, I meet Lorraine, her dog Peggy, and a couple of her friends at the Speech House car park<sup>54</sup>. Around here, the landscape fits the cultural idyll of the forest- a picturesque belt of ancient oaks that line much of the road and make the forest feel open and predictable. These grand and characterful trees, with multiple branches splaying out and broad, deeply-ridged trunks, stand as living memories. The oaks and Speech House emit a feeling of permanence and heritage. This order and neatness is reinforced by the apparent lack of forestry practices- there are few signs of felling, the messiness of pioneer growth during regeneration, nor monocultural coniferous stands that remain elsewhere as the legacy of 20<sup>th</sup> century afforestation.

As we leave the car park and head towards Woorgreens Lake and Crabtree Hill, the forest feels open and spacious. There are no visible signs of boar, though as Peggy trots around freely, she squats to scent mark again and again. Endlessly sniffing, she is alert to a multispecies smellscape beyond our human sensory capacities. She regularly looks around for assurance but knows where we are going. Lorraine explains this is one of her favourite places to walk, partly because it has a range of

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<sup>54</sup> The Speech House is near a stone that demarks the geographical centre of the forest and is a significant local landmark. It is the place where the forest Verderers still hold court, a tradition of over 400 years.

habitats rather than being “pure forest”, and also because other forest users make it feel safe, “in case something happens”.



*Figure 38- Snapshots from go-along with Lorraine showing, firstly, some tall bracken and foxgloves on a narrow path. The second photo shows Lorraine pointing out an area where she knew there were boar.*

A we continue walking, the open landscape transitions into something less spacious. In places, bracken growing tight to the now narrow path stand above Lorraine’s head, stems bowed from heavy fronds. The purple, conical heads of foxgloves stand equally tall. We get to a muddy footpath that encircles the lake: a

fringe of willows weeps to our right over the lake; and to the left, a ramshackle assortment of birch, nettles, dogwood and other shrubs that entangle themselves. Mid-summer, the forest is in the thralls of vigorous growth. We pass a muddy desire line of hoof and paw prints heading into the reeds. Lorraine stops and points ahead, telling me, “[I]n those woods, there are loads of boar. It’s not unusual to see them in the daytime either”. The last time she met one here, she says she hid behind a tree:

*I guess I do think carefully about where to go now. I am not afraid... I have seen boar a lot, so I know what to do...but you must learn...and try to avoid surprising each other. I probably take more care here, at this time (in summer).*

A few days later I walk with Adrian (resident), coincidentally, around the same area of forest but along different tracks. He has been coming here almost daily for years and knows the nesting holes of tawny owls; the history of different forest stands; and has stories of mobbing corvids and fallow deer herds. He also has a pragmatic reason for repeatedly coming here.

*It's open. That's the other thing I like about it. I know the bracken is growing up now in summer, but except for a few spots, you are not too enclosed. It is a wide track so you can generally see if something is on the track in front of you. So, if there is a boar, or a deer, or a fox, you can wait and watch it without necessarily getting too close...there are some other nice areas, but now the bracken is too dense.*

Openness and a sense of space helps minimise surprising and proximate encounters, as shown in winter. For some people, the vigorous bracken and understorey growth of summer means avoiding, or at least being vigilant, in certain places. As we continue walking, we head along a narrower path near the top of Crabtree Hill. There is a swathe of regeneration about 10 feet away, and a dense blanket of bracken either side of us. Visibility has diminished, and the forest no

longer feels open. Here, Adrian reveals how knowing the forest helps him be prepared and minimise the possibility of unexpected meetings.

*I know this path and I know there are boar in there. In fact, that is where they come through, just there (we look at the damaged fence which separates us from the regenerating stand of trees)... I also know there is a fence close and that it is unlikely there is going to be boar along this track. And, it is likely somebody has walked along here already today. But, if this was deep vegetation on both sides with open access, I wouldn't walk across here. Not because I'm scared of the boar, but I'm just aware this is where the boar might be, and I don't necessarily want the interaction. As I said, I have stood 20 foot away from boar with her (Polly, his dog) and watched them without any problem at all.*



*Figure 39- Snapshots from go-along with Adrian. The first shows the kind of open forestry tracks that make him feel safe, whilst the second is at a point where he has encountered boar and the forest feels close and potentially risky.*

Both Adrian and Lorraine emphasise that they are not scared of boar but just want to avoid surprise, close ‘interaction’, summing up the feelings of many interviewees. The chances of intimate encounters increases when vegetation is lush, leading to different human and boar responses, ones which might result in the avoidance of certain places entirely. Tony (resident) tells me of an area he now always avoids because, in his words, “a boar went for me” when he disturbed it in dense vegetation close to the path. Similarly, Duncan (resident) remembers an incident one summer evening when he walked into the middle of a sounder, which panicked and “ran in all directions”, including towards him.

Surprise, close encounters, inevitably, happen. This is partially due to the way boar experience the world. Boar perception is predominantly through olfaction, which is critical for foraging, communication, navigation and reproduction (Morelle et al. 2015; Brivio et al. 2017; Fulgione et al. 2017). This means boar spend much of their time moving with their noses close to the ground, making them surprisingly oblivious to happenings around them. Whole sounders might dig in the soil, pulling and tugging at roots, immersed in foraging. Relatedly, their eyesight is generally poor and better adapted to the blue spectrum light of dawn, dusk and night, rather than daytime (Brivio et al. 2017). Boar often respond to human encounters in several ways which, subsequently, might be interpreted in differently by different actors:

*I hid behind a tree...I made some noise because they have very bad eyesight, then it figured me out and off it went. (Lorraine, resident)*

*Boar sometimes come to you, but not in an aggressive way. If you stand still, they do this thing- they lift their heads up and down, perhaps trying to smell you, or get a different angle of sight...They might creep towards you and do the same thing. And if they do, generally if you walk away*

*from them, they won't follow...If they do follow, it is because they are still trying to get a sense of what you are, not because you are a threat to them...then they just run away. (Adrian, resident)*

*I don't really know what happened. But suddenly, this boar was coming towards me, looking at me, snorting...Its intimidating. (Duncan, resident)*

The tension of proximate interactions is often relieved if boar run off, frequently, it seems, when they comprehend shapes as human. Indeed, for all the conversations around encountering boar, there is a generally shared theme- most people suggest boar in the Dean increasingly avoid people. Whereas human-boar activities might spatially overlap, as with studies elsewhere, it seems boar generally act with different temporalities to minimise transecting human activities (see Thurfjell 2011; Stillfried et al. 2017b). That said, encounters do regularly happen, during which uncertain or defensive boar move towards humans and reduce distance. Encroaching on safe space, unlike other wild animals in the UK that respond through flight, might be accompanied through loud inhalations and exhalations whilst tilting their heads up and down, a reflection of their distinct sensory experiences<sup>55</sup>. Compensating for poor eyesight through smell and sound, therefore, making encounters where boar hold ground intense, contingent and 'intimidating'.



Importantly, surprising, proximate encounters are not just shared by humans and boar, but also with other animals. Adrian explains that boar tend to be less

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<sup>55</sup> Watson (2004) explains how boar have a secondary, vomeronasal, system of smell, which is attuned to the airborne traces of pheromones emitted from the nine glandular regions of boar. Their highly developed somatosensory cortex is directly connected to an abundance of nerves which makes their olfactory capacities far beyond those of humans.

“skittish” if they are encountered on tracks and paths i.e. with distance and comfort, than in amongst trees and vegetation. While most human forest users keep to tracks, dogs, on the other hand, might not. Speaking of times when they have encountered boar on paths, dog walking interviewees describe how their companions might respond when they have space and there is an atmosphere of calmness:

*If we see boar and we are far enough away from them she will sit and watch, but if I'm stood here and she can't see the boar, but she knows they are near, she will start whimpering and barking and whining and stay by my side. (Adrian, resident)*

*Jimmy came right behind me and wasn't interested in getting nearer or going for them. He just sat, still. And she (the sow) just watched us, didn't do anything. And she was like, 'fine fine, have a nice time' and went off. (Karen, resident)*

Slow, distanced encounters on forestry tracks might be discomfoting for some dogs and their owners, but, for my interviewees at least, they haven't resulted in severe problems. However, violent confrontations resulting in injuries to both dogs and boar do occur, notably, when dogs are off the lead, running through the forest undergrowth away from their owners. During these moments, moving fast and excitedly, dogs might encroach on “boar safe space”, as Adrian (resident) refers to it, and cause surprise. These risks are increased in summer when sounders still have younger boar and vegetation provides cover, minimising alertness. One participant told me their dog had to have her belly stitched together after being “gored”, while others, including Neil (resident), have found dead piglets with bite marks. Pre-empting these possibilities, many dog owners, therefore, keep their dogs on leads to help them, their companion, and boar, navigate the forest more safely.

*If boar have time to realise that you are there, or that the dog is suddenly not jumping on top of them, they will generally move away... I have*

*always advocated keeping dogs on leads even before there were boar in the forest. It's just one of those things that I think is right. (Tim, resident)*



*Figure 40- Snapshots from go-alongs with Tim and Karen. The first shows Rosey (Tim's dog) on the lead. The second shows Jimmy (Karen's dog) off the lead.*

It seems for many, but not all, dog walkers, the increasing unpredictability of the forest heightens their feeling of care for their companion, something expanded towards boar and other wildlife, too. The continual need for spatial, temporal and behavioural negotiations through this less certain, multispecies landscape, appears

to demands new 'response-abilities' and ways of learning to be affected by the presence of animal others (see Brown 2014; Despret 2013; Haraway, 2008;).



*Figure 41- Collection of photographs from trail cameras during verdance.*

## 6.5 Senescence (recurring)



*Figure 42- Collection of photographs from the return of autumnal senescence.*

The seasonal rhythm of forest lives are cyclical. By mid-August, boar movements have once more widened and they no longer forage exclusively within the forest. Small patches of disturbance begin to appear in verges and rides before boar, once again, fully explore villages for food and new, territorial possibilities. The geographies of young boar extend with their sounders as they learn the possibilities of new places. By September, though the bracken is still dense, though sagging and collapsing on itself, in some places, beginning to brown and yellow. Leaves are fall from oak trees as temperatures begin to drop. As annual boar habits recur, so do their fluctuating relations with humans and other nonhumans. Familiar tensions, atmospheres and negotiations return and circulate the Dean, alongside more linear temporal occurrences that flow concurrently.

### **6.5.1 Expanding insecurities**

So far, the focus has primarily been on the forest and its surrounding settlements, but boar are sentient and mobile learners, exploring landscapes for new

opportunities. As much as the boundaries between the villages and the forest are porous, so too are those to the surrounding Dean farmland. Here, boar appear to be increasingly discovering new opportunities for foraging, bringing them into contact with a broadening range of human actors. Many people who live beyond forest villages tell me they are increasingly seeing boar and their traces when only a few years before they were not present. These expanding geographies generate different types of insecurities to the Dean, though ones not uncommon to boar presence elsewhere in Europe, namely, to agricultural spaces and practices (Hearn et al. 2014; Storie and Bell 2017).

In early autumn, I descend a winding road from the forest and, just where the woodland cedes to more open, agricultural land, turn into a farm to meet and interview William, a farmer who rears rare breed pigs. We talk and later wander around his sheds, though only after he has established I haven't recently worn my shoes in the forest. He says his pigs are 'vulnerable' to disease and he is "serious" about biosecurity. As some piglets grunt in a pen with their mother, William agitatedly tells me about his issues with boar. "Night after night" they come out of the woods, he says, getting into the pasture at the top of the farm. Whilst sounders dig up the grass, male boar sometimes try and get to his sows. Whereas he used to employ a gamekeeper part-time, now he is full-time, out every night shooting boar. "They are fast learners...they learn their environment, so, they know where food is, but they also learn where guns are", making it hard to predict their incursions. William's security concern is two-fold. Firstly, he is concerned about male boar breeding with his rare breed sows. meaning he now tends to keep them in the sties rather than in the fields, making him worried about their health and welfare. Secondly, and reflecting the growing concerns of other interviewees with a stake in agriculture and conventional biosecurity matters, he is seriously worried about stories of African Swine Fever (ASF) in Europe. For William, it is a matter of "when rather than if" ASF arrives in the UK, and expanding boar thus reflect an expanding epidemiological risk.

William's experience chimes with stalkers I speak to who all say they are increasingly called out by landowners who have boar foraging in or passing through their fields. "Some people have occasional problems", Ivan tells me, though also knows "one poor chap with a fruit farm keeps getting hit...the kind of thing that puts you out of business". Shaun, another interviewee who farms and shoots, has a smallholding with several Gloucester Old Spot pigs, not as a commercial enterprise, but because he "comes from a family that have always had pigs", a not uncommon situation around the Dean. He, too, tells me he has been out more and more at night, "being vigilant", because he knows boar have been passing through his land. "They have already been at the fields a couple of times recently", he tells me, "so it is a case of catching them in the act". His concern is disease, not just ASF, but also Foot and Mouth, another evocation of the past lingering in the present:

*I look after my pigs, so I don't think it is healthy to have wild animals coming into the farm...it wouldn't be great, but I could deal with it. But some of those bigger farms further north...things could get messy if they get in up there...we've already been through it with foot and mouth and the sheep, so this is the last thing we want around here...we all need to do our bit (by controlling them).*

As boar geographies are expanding from the forest, through villages and into agricultural spaces, so the types and scales of risk are diverging. For farmers, the concern over disease transmission, livestock health and crop 'damage' reflects common accounts from Europe where, as discussed in chapter 2, boar are flourishing (Massei et al. 2011; Barrios-Garcia and Ballari 2012; More et al. 2018). Though such concerns have an economic aspect, they are also tied to further insecurities about culture and heritage, whether the future of rare livestock breeds or else another disease outbreak. The affective presence of boar, therefore, also unsettles relations and practices of care and responsibility that some human actors have towards companion species within farming landscapes. Relatedly, boar expansion might be understood as not only broadening perceptions of the types of risk they pose, but also expanding their scale and temporality. Beyond concerns of

an immediate, personal or bodily insecurity, as discussed by many participants, these are amplified by the anticipation and pre-emptive concern that they are risky for an abundance of other animal lives and their practices of care.

## **6.6 Chapter Summary**

This chapter tracks the ways in which feral bo(a)rderlands flux with sensations and different understandings of (in)security, risk and enchantment. Seasonal changes in boar movements and behaviours are tied to their multispecies relations and individual and collective motivations (Morelle et al. 2015). Their relational autonomy and behavioural rhythms have altered the spatial configurations of the Dean, challenging human demarcations and unsettling (b)orderings of space (Murdoch 2006; Hinchliffe 2007; Buller 2014). Relatedly, these movements and their sudden presence have also unsettled the choreographies that imbue meanings in place (Edensor 2010b; Ingold 2011; Cresswell 2015). By moving fluidly through landscapes, boar present themselves to humans in different ways and elicit different kinds of spatial-temporal negotiations and affective responses. They are, it seems, 'monstrous', simultaneously risky and promissory (Lorimer and Driessen 2013; Tsing et al. 2017). These risks induce multiple insecurities with differing spatial and temporal scales, sometimes bound up in the immediacy of encounter, or else ones imbued with cultural, ecological and economic concerns (Buller 2013c; Morelle et al. 2016; Crowley et al. 2017b; Drenthen 2018). On the other hand, for some participants, boar have brought a new, affirmative charisma (Lorimer 2007b) to the Dean which excites and enchants. To conclude, boar appear to have made the Dean increasingly 'feral' by generating uncertainty, churning relations, and co-producing a messy, rewilded landscape that requires different modes of negotiation.

## FERAL PRACTICES

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### 7.1 Introduction

Chapter 6 discussed some of the material and cultural tensions arising from cohabitation with rewilded boar in the Dean. This chapter primarily addresses the ways in which government agencies have sought to secure and regulate their autonomous presence through an assemblage of performative, knowledge practices. Bio-securing feral bo(a)rderlands is a fundamentally lethal exercise exerting sovereign power at a biopolitical scale. However, the political technique of culling is not carried out in isolation, but, tied to other practices that monitor populations and health. Culling requires boar and, to a degree, their ecological relations to be ‘made present’ in politics (Hinchliffe 2008). Controlling and monitoring, therefore, gathers together a range of different sites, knowledge practices and official agencies to create ‘choreographies’ (Thompson 2005; Law and Lien 2013) of boar security.

The chapter considers how both culling and statistical datasets translating the lives and deaths of boar into management strategies are the results of complex, contingent and evolving gatherings of knowledge. Though ecological monitoring practices and their outputs are often represented as objective and rigorous, this veils a messy ‘hinterland’ (Law 2004) of research. Therefore, it is important to consider when, where and why different knowledges of boar are desired, and how these are produced and translated. This chapter, therefore, explores the emplaced dynamics of knowing and securing boar, the role different ‘affective logics’ play (Lorimer 2015), and the ways technologies can aid attunement to boar lives. Critically, it also pays attention to the ‘tinkering’ (Mol 2010) of official agencies as they have sought to establish techniques of ordering and regulating boar when

there have been no locally, pre-established tools nor knowledges for doing so. By underlining this contingent learning process, the affective capacities of boar themselves, as well as their dynamic relations in the wild, this chapter shows how these practices themselves might be understood as ‘feral’.

Initially, the chapter broadens the story away from the Dean to another location in southern England where a population of boar had earlier established. Following this, it then turns to the practices being carried out in the Dean itself, primarily by the FC, though also with other government agencies. It considers how the desire to make boar ‘cullable’ was inhibited by a lack of policy surrounding their unsanctioned presence and a need to formalise monitoring practices to portray the FC as a ‘knowledgeable’ organization. It also discusses how changing political strategies facilitated their sovereign control on public estate and considers the complex more-than-human assemblages bound up within such practices. In so doing, the chapter highlights how the forest is connected topologically to other locations by the circulations of boar knowledges.

## **7.2 Boar before the Dean**

To understand how boar increasingly became a political matter through evolving, official knowledge practices, this subsection initially considers feral rewilding beyond the Dean.

### **7.2.1 Making boar present**

Though the first farmed boar in England were not covered by any legislation, by the mid-80s, boar had been included in a Modification Order to the Dangerous Wild Animals Act 1976 (DWAA), requiring owners to apply for licences from local authorities. Approval would be granted if applications are “not contrary to the public interest on the grounds of safety, nuisance or otherwise” and show animals

“will at all times...be held in accommodation which secures that the animal will not escape”<sup>56</sup>. The early principles of boar biosecurity in the UK, therefore, primarily relied upon regulatory and spatial ‘borderlines’ (Hinchliffe et al. 2013). Firstly, the English Channel is a topographical barrier that has prevented the autonomous movement and natural recolonisation of previously extirpated ‘biothreats’ into Britain, whether boar, bears or wolves. Importing boar as livestock, however, permeated this preventative border. Secondly, the DWAA licencing process should have ensured farm infrastructure ‘secures’ boar in enclosures. However, by the mid-late 90s, increasing accounts of their elusive, wild presence meant government agencies, such as English Nature<sup>57</sup> (EN), began to pay attention. David, a government agency representative present at the time, explains his involvement;

*I think it was spring ‘97 when I first got to hear about them, and then got involved...in those days, in complete contrast to now, we had a little bit more freedom to develop research to supplement and gain information, to support the day job work I suppose...so I got involved in monitoring the boar...my boss agreed, that this is something we should be keeping an eye on nationally.*

For David and his boss, boar offered an intriguing new actant within rural wildlife assemblages. Simultaneously, the Ministry of Agriculture, Fisheries and Food (MAFF) Conservation Division<sup>58</sup> were also ‘keeping an eye’ on boar. In 1998, the Central Science Laboratory (CSL) published a risk assessment, entitled the ‘Current

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<sup>56</sup> <https://www.legislation.gov.uk/uksi/1984/1111/made>

<sup>57</sup> The precursor to Natural England, now self-described as “the government’s adviser for the natural environment in England, helping to protect England’s nature and landscapes for people to enjoy and for the services they provide” - <https://www.gov.uk/government/organisations/natural-england/about>

<sup>58</sup> The precursor to the current Department for Environment, Food and Rural Affairs (DEFRA)

Status and Potential Impact of Wild Boar (*Sus scrofa*) in the English Countryside' (Goulding et al. 1998). As contemporary modes of biosecurity are arguably enacted through pre-emption, preparedness (Hinchliffe and Bingham 2008; Braun 2013) and intervention prior to risks being 'actualized' (Donaldson 2013), these official enquiries can be understood in two divergent ways. On one hand, they were pre-empting future risks by gathering and formalising knowledge on boar. For example, the MAFF risk assessment used field data and literature from Europe "to determine the current status...and to evaluate the *future potential* for conflict" (Goulding et al. 1998, p. 2, emphasis added), concluding "wild boar are a particular concern to the agricultural industry regarding crop damage and animal health...[and] in relation to public safety, road traffic accidents and conservation issues" (ibid, p. 2), salient concerns in consideration of the stories from Chapter 6.

On the other hand, the two government enquiries were reactive responses 'after the event' (Donaldson 2008). That is, boar evading the borderlines of farm infrastructure revealed the lack of preparedness, reflected in the absence of a strategy dealing with their rewilded presence. Mason (2014) describes how biosecurity regimes rely on risk assessments and analysis to initiate "new forms of knowledge, visibility, calculability, classification and, crucially, control" (p. 368). Indeed, official (re)introduction proposals are expected to follow strict IUCN guidelines prior to release (IUCN/SSC 2013). The MAFF risk assessment and EN work, on the other hand, came in response to the failure of pre-existing regulatory farming mechanisms, something acknowledged in the report (Goulding et al. 1998).

Under such circumstances, there was a need to make boar present in politics. However, this would require new practices to gather and (re)form knowledges of long-absent animals that were described in the MAFF risk assessment as "primarily nocturnal...shy and secretive...well camouflaged" (Goulding et al. 1998, p. 41). Both David and the MAFF officers drew on a relatively analogous assemblage of techniques to make them more amenable to politics. Primarily, this relied upon

traditional field skills to track and trace boar in places where anecdotal information suggested they were present. David explains:

*I spoke to farmers and then, after some initial visits, effectively worked out informal transect routes that went to good areas...if there was field evidence to be seen, I would be likely to find it. So, it was kind of walking transects- woodland tracks, woodland edges...edges with barbed wire where you could pick up bristles and things like that...it was an informal transect approach. But then... there were times when I basically just quartered my way through the blocks of woodland, opportunistically looking for evidence as well. It was fairly informal, I have to say!*

Similarly, the MAFF report outlines “[e]vidence was provided by field signs” (Goulding et al. 1998). The intention was to find visible signs and demark what ecologists might refer to as the ‘plot occupancy’ of boar (Engeman et al. 2013) through typical ‘presence-absence’ surveys (Sutherland 2006). This was partially through systematic transect sampling, but also through a more intuitive, ‘opportunistic’ approach that was open to the elusiveness and unpredictability of this unfamiliar, rewilded presence. These early surveys, therefore, relied upon similar ‘affective logics’ (Lorimer 2015) to those described by some of the interviewees in Chapter 6, showing such field techniques to be mobile and transferable between locations and grades of ‘expertise’. Locating boar was not purely about witnessing them first-hand, but developing a sensibility to their traces and tracks, being ‘affected’ by and ‘attuning’ to their signs of life (Despret 2004; Latour 2004b; Despret 2013). This involved noticing and ordering the ‘textures’ (Law and Lien 2013) of their material relations in the landscape: their hairs snagged on metal fences; the impressions of their hoofprints in soil; and their disturbance of soil. Once again, understanding boar presence was about recognising and learning their spatial-temporal rhythms. In other words, making them present focused on what boar ‘do’ rather than what they ‘are’ (Lien and Law, 2011).

As David highlights, collating evidence also relied upon the heterogeneity of rural space by transecting accessible networks of woodland footpaths and the edges, borders and headlands that separate wooded, grassland and arable space, liminal places that boar are known to utilize (Thurfjell et al. 2009). For David, such a method was, in Kohler's (2002) words, a scientific 'practice of place', one reliant on the situated knowledge of the heterogenous, rural landscape and attuning to 'beastly [boar] places' (Philo and Wilbert 2000a).



These early research projects highlight, just like in the Dean, that boar slip through the permeable, spatial borders that territorialise rural Britain (Murdoch 2006; Buller 2014). In southern England, however, they were primarily blurring the boundaries between wooded and agricultural spaces, rather than forest-village edges. Critically, this was mostly privately owned, rather than government managed land. Tracing fluid boar mobilities, therefore, meant David and the MAFF researchers needed to gather data by cultivating relationships and gleaning information from landowners, gamekeepers, and other rural actors whose lives entangled with boar. Making boar present, thus required a diverse, organic bricolage, or 'feral methodology'<sup>59</sup>, incorporating field signs, the anecdotal stories of various rural actors, and stalkers' logbooks that recording biological data about shot boar. This, however, had mixed results:

*I tried... to keep track of all the animals that had been killed...I had got quite a good network of contacts locally, so I think probably did manage to hear about all of them, or nearly all of the ones that were killed. (David)*

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<sup>59</sup> This was discussed in relation to my own uncertain, emergent fieldwork methodology, but it feels as though David's description of his work shared similarities with my own. It was emergent, slightly ad-hoc, and uncertain due to the nature of boar and rural space.

*...local hunters are often reluctant to give information on areas where there have been sightings...The hunters are secretive about where the animals are located for fear of attracting poachers or anti-blood sport campaigners. At the opposite end of the scale the farming community are more readily talking about where wild boar have been seen. (Goulding et al. 1998, p. 21)<sup>60</sup>*

These relations, however convivial, were significant as they provided knowledge of both living and killed boar. Importantly, data on killed boar offered the possibility of moving beyond a mere 'presence-absence' spatial survey, to one where boar numbers could, potentially, be estimated.

*I did a kind of rough, retrospective census based on body weight, gender and age estimations, and I reckoned that the population had probably, at that time, never exceeded about 30ish animals...knowing this could be useful for future management. (David)*

David's 'retrospective census' was primarily about estimating the past population of the boar in his study. The MAFF risk assessment, however, had an alternative temporal orientation towards the future. Whilst acknowledging the lack of accurate data on animal presence, mortality, fecundity and dispersal rates in Britain, the assessment sought to anticipate and predict the "[p]otential for expansion and future areas of conflict" (Goulding et al. 1998, p. 2):

*A simple model, with three age classes...was produced in STELLA<sup>®</sup>, and all combinations of fecundity and mortality rates were used...by plotting the*

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<sup>60</sup> This is similar to my own experiences of fieldwork. Though I was able to contact some members from the stalking community, many didn't return my calls.

*spatial locations of the current confirmed locations, we can estimate minimum and maximum numbers...a mid-range figure of 100 animals can therefore be used as an example starting population to give projected population sizes in future years,... This projection must be read with great caution, since it relies on three uncertain estimates...The computer modelling exercise indicates that the population of free-living wild boar in south-east England will have a positive growth rate.*

These two 'estimations' are significant because they show how boar shifted from being rarely encountered, charismatic local presences, to potentially scaled-up, modelled populations that might help pre-empt particular futures. Recording presence quickly became a matter of calculation, making them amenable to databases and related techniques of governance. Though David readily admits his method was 'rough' - indeed, it was questioned by some of his contacts who applied different logics of calculation<sup>61</sup> - and the risk assessment emphasized the "great caution" needed in reading its projections, both 'estimations' brought these animals into the domain of the government. Attempting to 'estimate' their population, however accurately, reflected the commonplace desire to quantify wildlife and make it a calculable, (bio)political matter (Bowker 2000a; Enticott 2001; Bear 2006; Braverman 2014b). This, as the chapter will go on to show, is important to regulatory practices bio-securing boar, both in England and in Europe (Engeman et al. 2013; Boonman-Berson et al. 2018; Keuling et al. 2018).

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<sup>61</sup> David's 'informal' calculations were contested in ways that reflect similar debates in the Dean, as described in Chapter 8. This is due to a perceptual discord between rooting and their population. Primarily, it seemed people in the 'deer world' applied different logics and alternative modes of knowing that were informed by, in David's mind, 'a distorted view of the numbers'.

In addition, dead boar also contributed to knowledge in other ways. Namely, they allowed government researchers to learn about their anatomy and aid their attempts to establish whether these animals were, indeed, 'wild boar'. Assessing boar in proximity facilitated the ontological enquiry to categorise them as wild or hybrid, pure or impure. According to the MAFF report, "the phenotypic appearance of carcasses" (Goulding et al. 1998, p.iii) verified these animals as boar:

*They have...a large head and shoulders, body weight carried forward from a small rump, long narrow snout, small ears, thick underlying brown pelage and a straight tail. Feral pigs...and hybrid animals... typically have smaller head and shoulders, larger rumps, shorter snouts, larger ears, a more curly tail and lack the underlying thick brown pelage. (Goulding et al. 1998, p. 44)*

However, this assessment was delivered with a caveat that it should not "be regarded as proof of identity" (Goulding et al. 1998, p. 44), the implication being that whilst their 'identity' was uncertain, so too was their right to belong.



These two investigations reveal how governing authorities relied upon a seemingly organic and emergent set of practices as they tried to understand the 'distribution', 'status' and 'impact' of unofficially (re)introduced boar (Goulding et al. 1998).

Furthermore, they highlight how different epistemologies and practices not only inform understandings of how boar presence might be measured, but, are also part of an ontological politics that queried what boar 'are', and also began to circulate biopolitical translations of boar presents and futures.

### **7.3 Controlling boar in the Dean**

This subsection shifts the narrative temporally and turns attentions to the Dean. It considers how boar are managed by the Forestry Commission (FC) on the public

forest estate, rather than in the wider Dean region (such as the villages or farmland). Firstly, it briefly outlines how the FC experienced boar (re)introduction in the Dean, before then going on to discuss the practices and more-than-human assemblages that surround FC attempts to secure and regulate their presence.

### 7.3.1 'Dumped' boar

I interview Steve, a retired forestry officer working at the time boar first appeared in the late 90s. In his words, a farmer just north of the statutory forest near Penyard and Chase woodland (towards Ross-on-Wye) “went broke...gave up and let the boar out”. The boar initially found themselves in a heavily farmed landscape and, much like those in Southern England, were “controlled by the farmers” if they moved beyond woodland boundaries. These boar, unsurprisingly, were “shy”, only rarely venturing through agricultural space into Dean settlements and making themselves visible to the wider public<sup>62</sup>. Despite their existential threat, these boar established a small, self-sustaining and autonomous population that survived for several years.

A second event occurred six years later, in the winter of 2004, when another group suddenly appeared in Highmeadow Woods, a block of FC land to the west of the main forest. Their presence was first encountered by a horse rider who “couldn’t believe [her] eyes” when “a group of something” materialised into boar<sup>63</sup>. These animals- estimated to be around 60- had apparently been “dumped” on public forest estate<sup>64</sup>. Steve explains the FC wanted “to deal with them”, but DEFRA legally

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<sup>62</sup> <http://news.bbc.co.uk/1/hi/england/gloucestershire/3375611.stm>

<sup>63</sup> <https://www.walesonline.co.uk/news/wales-news/horse-rider-chased-wild-boars-2417248>

<sup>64</sup> Interestingly, participants mentioned other unexpected animals being seen in the forest, including skunks, lynx, panther and domestic pigs.

advised them (along with Trading Standards) to identify the boars' owner first. This was because there was still no government policy nor guidance on how to deal with their presence. Neither, for that matter, did the FC have any internal operational policy for dealing with them. This delay remains a lingering source of frustration<sup>65</sup>:

*We could have shot the lot there and then and sorted it... but had no power to do anything...we had no legislative authority to shoot them, control them. (Steve, Forestry officer)*

*If we had a crystal ball on the day those 60 animals were dumped near Staunton, we would have rounded them up onto the back of the truck and sent them away or shot them. (Mark, Forestry officer)*

Following the public consultation and 2008 publication, "Feral wild boar in England: An Action Plan" (DEFRA 2008)<sup>66</sup>, boar were officially classified as 'feral' meaning governing agencies could control them without the complications experienced by Steve and his colleagues in earlier years. 'Feral' boar belonged to no-one, so individual landowners could manage them as they saw fit. In other words, though boar have always been "killable" (Haraway 2008, p. 80), they became more readily 'cullable', as, according to Mark (Forestry officer), the FC could "get over the hurdle that we could not shoot them because they belong to someone else". Though earlier government research investigating boar had highlighted how "[t]raditional methods of wildlife management are often ineffective in the long-term, environmentally hazardous, publicly unacceptable and uneconomic" (DEFRA 2005, p.1), culling is still the most common political technique applied to control risky or

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<sup>65</sup> Rumours still circulate about who this was and why: was it a bankrupt farmer; someone perturbed by rigorous biosecurity controls imposed in the aftermath of the UK's 2001 foot and mouth crisis; or an owner who found boar too feisty to farm?

<sup>66</sup> This is addressed in more detail in Chapter 8.

abundant animals and secure vulnerable spaces (Enticott 2008b; Law 2008; Gibbs et al. 2015; Crowley et al. 2018)<sup>67</sup>. The ubiquity of such sovereign power is highlighted by the frustrated responses of Steve and Mark to the FC's initial inability to shoot boar and 'sort' their presence.

Whilst political uncertainty was being addressed bureaucratically, official accounts suggest the two separate groups of boar drifted towards the core forest before intermingling sometime during 2006 (Stannard 2011)<sup>68</sup>. Taking advantage of "the ideal environment" (Steve, Forestry officer) of the forest- shelter, food and absence of human and nonhuman predators- the boar began establishing their own places. However, their behaviour also started causing tension and, by the time the Action Plan was delivered, boar were already blurring established human-nonhuman boundaries (as described in Chapter 6). The relatively unique encircling of settlements around the statutory forest and their "growing confidence", increasingly brought them into the local public consciousness. In 2009, the FC commenced "dawn/dusk shooting exercises" (FODDC 2009, p. 4) to:

*...minimize the risk of adverse interaction between people, dogs, horses and the boar by keeping population densities low; minimize the visual and physical damage to amenity grasslands by keeping population levels down and as far as possible confined to the core forest areas; and maintain the population at a manageable size on the public forest estate so numbers can continue to be controlled in the future. (Stannard 2011)*

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<sup>67</sup> DEFRA have funded several research projects into the feasibility of regulating wildlife through non-lethal means, most notably through trials investigating fertility control (DEFRA 2005). This has several drawbacks and is not yet at a stage where it can be used in the wild (Massei et al. 2008).

<sup>68</sup> Steve, however, suggests this isn't the whole story. "Somebody moved some of them", he tells me vaguely, perhaps out of "mischief or intrigue", a rumour I heard from other participants.

Culling, therefore, was employed to address the multi-scalar ‘insecure geographies’ (Philo 2015) boar were co-producing in the Dean. Controlling their population could, theoretically, secure the “ontological well-being” (Buller 2008, p. 1583) of multispecies inhabitants by reducing risky encounters and physical disturbance. Culling also had multi-temporal objectives. Firstly, it sought to regulate boar movements within the forest and across forest-village ‘borderlines’ with an imminent, tangible effect. Secondly, it was an intervention to pre-emptively curtail further Dean ‘rewilding’, therefore exerting a form of ‘ontopower’ (Braun 2013). That is, it was carried out in anticipation to ensure one future- that of an abundant and flourishing boar population- would not manifest. Such performativity shows how the FC, as well as other humans intervening in nonhuman lives, act as multiple ‘boundary agents’ (Collard 2012), regulating not only the spatial borders between the forest and settlements, but also present and future natures, and human-nonhuman relations more broadly. Finally, the management approach also reveals the biopolitical nature of intervention, for ‘[a]dverse interactions’ and ‘damage’ were deemed attributable to the boar population, rather than individuals, thus informing management at the collective scale.

With the FC deciding to mediate human-boar relations through the sovereign enactment of culling, it is important to know how this is carried out. As (re)introduced boar were a novel, unfamiliar presence and, as the FC commented at the time, “they had very little experience to draw on in managing the situation” (FODDC 2009b, p.4), securing feral rewilding would, therefore, appear to require new skills and knowledge practices.

### **7.3.2 Stalking boar**

In 2009, when the FC began their ‘controlled cull’ (Stannard 2011) the boar population was estimated at 90-100 individuals (see Figure 43). One might think

that in the early days, when the population was lower, culling would have been easier, but John (Forestry Officer) suggests not. Rather, sitting down for an interview in his office, he tells me the more boar there are, the easier it is to find them. On the other hand, when their numbers are lower, “the harder the job and the more effort you have to expend for every single one”. Whereas the FC were “successfully harvesting” boar as their numbers increased, he argues “it became quite clear...we would never keep them at that low number [of 90]”. Culling has always been “below the recruitment level”, management parlance for the rate at which boar reproduce and the population grows. According to John, culling and controlling boar populations is difficult for several, interconnected reasons.

Year	Estimated Population	Target Population	Cull Achieved
2008/09	100 - 150	90	38
2009/10	150	90	62
2010/11	200 - 250	90	122
2011/12	300 - 350	90	150
2012/13	450 - 500	400	100
2013/14	535	400	135
2014/15	819	400	361
2015/16	1018	400	543
2016/17	1562	400	492

2017/18	1204	400	ongoing
2018/19	1635	400	450

Figure 43- <https://www.forestry.gov.uk/forestry/infd-9fyfc5> accessed 08/05/2018

Firstly, restrictions on hunting techniques in the UK mean locating boar in an area the size of the forest is difficult. Whereas ‘drive hunts’, in which dog packs flush boar towards waiting hunters, are commonplace in Europe (Náhlik et al. 2017), hunting with dogs in such a manner is illegal in the UK. This leaves two other common modes of hunting, stalking and shooting from high seats. In the words of Karl (Forestry Officer), speaking at a presentation on boar management, “high seats on boar runs on clear fell sites...[can bring] quite a lot of success”. Disturbed forest understorey and soil, perhaps from brash rakings and recent clear-felled stands, attracts boar and is ideal for strategically placed high seats where rangers wait to intersect their movements. Sometimes these are baited with corn. However, while high seats are common on private land, their physical presence and visible demarcation of culling spaces within the public forest means, from the FC’s perspective, they have the “unfortunate impact of attracting anti-cull activity”. Shooting on FC estate, as discussed further in Chapter 8, is a public matter.

The commonly deployed method, therefore, is stalking, a more spatially and temporally fluid practice that offers rangers a mobility and spontaneity akin to the boar they seek to follow. It is also a practice familiar to rangers who manage deer similarly and, as the Dean has “large areas of uninterrupted forest” (Karl), it is a relatively effective approach, one further aided by the boar behaviour:

*You can stalk a lot closer to a group of boar than you can deer because [of] the way they feed with their heads down, rooting in the mud. It means there are a lot less eyes looking at you up and about, and obviously their eyesight is not so good either.*



*Figure 44- A re-moveable high seat in the forest*

That said, stalking boar is a very different practice, requiring different skills and techniques to those previously learnt for deer:

*If you're just walking through an area of vegetation, not making a lot of noise...[though] not trying to be quiet...that movement is enough to make the deer drift...hopefully towards the edges, where there are safe shots for waiting rangers and stalkers. It's quite effective... Erm, with the boar it is*

*less so, because they tend to sit tight more...deer are a prey species, you know, and their natural reaction is to freeze...they'll stand and stare, ascertain the risk, then run. Whereas a boar, they may or may not stand their ground. They may just quietly push off into the thicker vegetation and hunker down...and you can walk right past them. Particularly in areas with thick cover where they feel quite secure. (John, Forestry officer)*

The 'thick cover' provided by dense understory and regenerating tree stands can make boar seem elusive, however proximate they are. In the early days of boar, it reports state it took four times longer to cull individual boar than deer (Stannard 2011). So, if boar 'hunker down', what is the strategy for finding them?

*Mostly it is a case of knowing where the boar are coming from, knowing what they need and like, which is food and security for hiding and lying up. They have preferred spots. Then, either ambushing them between those places... in open ground, either staying with a vehicle or high seat or, you know...just stand leaning against a tree. Or, being opportunistic, just stalking about on foot and trying to find where they are lying up in thick vegetation, following their tracks, and ambushing them there...or sometimes just catching them as you see them. (Karl, Forestry officer)*

Like many forest residents and the government officers in southern England, FC rangers also rely on the accretion of situated knowledge- learning boar places, their rhythms and behavioral tendencies. But stalking is not purely a human activity reliant on ocular cues for, as John dryly notes in interview, "if you can't see an animal, you can't shoot it!". It is also a multispecies and multisensory one. FC operations policy demand rangers are accompanied by a dog, ostensibly to help track animals after they have been shot. However, John (Forestry officer) suggests their sensory capacities also help rangers expand their awareness of the landscape. A dog that is well-trained and alive to olfactory and aural cues unnoticeable to humans can alert rangers to boar presence. Furthermore, they also "encourage" boar to move from safe spaces by "being noisy and nipping at their arses...a subtle

[but]...perfectly acceptable” difference to hunting with dogs. FC dogs and their human companions, therefore, are both trained to follow scent-trails and become accustomed to the traces of boar through the landscape.

There is, moreover, another critical aspect that makes culling a challenge, namely, boar knowledge. Earlier, John said it was harder to find boar when there were fewer in the forest, but he also says their behavior has changed. Since the FC increased culling pressure in recent years, “they have become more nocturnal” and tend to be “in the open less in the daytime”, an observation matching research elsewhere (Keuling et al. 2008b; Thurfjell et al. 2013a; Náhlik et al. 2017), as well as the observations of other interviewees. Boar learn from hunting, adapting their rhythms according to the threatening activities of humans. Furthermore, as well as an incremental change in temporal habits, John also suggests individuals and sounders alter their movements in relation to culling:

*We can't go back to the same place every day, we need to mix it up. The boar will move on and find somewhere else if they learn it is risky...they are clever animals... They begin to find safer areas, you know. They might not move too far, though they can if the pressure is too intense. So, we have to rotate where we go.*

To stalkers, boar are not inert objects but creative, learning subjects, which makes stalking sound like it could be a slow and frustrating technique, but, John suggests otherwise. Rather, there is a sense of pride “in the process...the learning” and being “professional and highly competent”. Culling, he says, is not about the “pleasure or pride in killing”, but about the affirmation of ones’ field skills and knowledge of wildlife, and about understanding animals “whose senses are far greater than ours”. In his words, “the shot is just that final bit which we need to do for management”.

These comments show how long-established knowledge practices of deer stalking in the UK, while useful, are not entirely transferable to boar. Their distinctive behavioral ecologies have required new modes of knowing and moving in the field. It has necessitated, in STS terms, a form of ‘tinkering’ (Mol 2010) whereby the rangers are constantly “adjusting bit-by-bit to lives and bodies” (Atchison 2015, p. 6), not just of boar, but, also their dogs, the vegetation and other humans. Rangers, therefore, are involved in a complex, relational interplay between boar, evolving boar places, and their own human perceptions of the forest environment. This involves ‘attuning’ to the landscape and the inherent difference of boar from other, more familiar, nonhuman life. ‘Learning to be affected’ by boar involves developing new embodied skills, relations and sensitivities to forest interconnectivity. It also infers an conceptual understanding of boar as creative and mobile becomings, acting with relational agency and subjectivity, as discussed in Chapter 2 (see Buller 2012; Hinchliffe 2007).



As well as learning boar mobilities’ and relations, stalking also requires an awareness of their biology and anatomy. Rather than dispassionate, rangers often appear fascinated by learning about boar, reflecting other research on culling practices (see Crowley et al. 2018). As part of the 2008 Action Plan, the Deer Initiative (DI) drew up a series of ‘best practice’ guides, one of which relates to shooting and ‘processing’ carcasses, another way in which deer knowledges need to be relearnt. This, firstly, relates to shooting technologies, with the DI recommending stalkers shoot with high powered rifles over .270 calibre, though

Karl (Forestry officer) explains the FC use .308 calibre rifles with minimum 165 grain, non-lead bullets<sup>69</sup>.



*Figure 45- Photo of a .308 rifle bullet (taken at a shooting shop)*

Secondly, shot placement is critical. Stalkers often shoot deer behind the ear to destroy the respiratory and circulatory systems and ensure a quick death. Karl, however, explains it is “a personal bugbear” when people use this shot on boar due to the thick muscle and cartilage obscuring the spine and esophagus. In contrast, whereas a head shot on deer can be risky because of the small and more mobile target, this is less problematic on boar and there is more chance “you can destroy the animal’s brain and cause instantaneous death”. Conversely, boar behavior complicates headshots as they are often “scenting”- moving their heads up and

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<sup>69</sup> This is part of their operations guidance. As well as the guidance on dogs and rifles, there is also an extensive equipment list. The rangers wear Kevlar protected hunting trousers, perhaps Harkila or Swedteam, and hi-vis clothing “to satisfy the health and safety people” (Karl). The rangers also carry a 12 bore semi-automatic high capacity shotgun loaded with solid slugs, and a handheld thermal imager to help them locate boar in bushes, or anti-cull publics at night.

down- if they sense human presence<sup>70</sup>. Shooting under such circumstances can make a fatal shot difficult, unless the boar relax, drop their heads and carry on feeding.

For that reason, the preferable shot is the “traditional heart-lung shot on a broadside animal” which causes a quick, terminal bleed in the lungs, and also hits the spine. Whereas this will make an animal drop, Karl suggests shooting the heart means it is more likely to run and die slowly. This has practical repercussions as much as welfare ones, for rangers might have “to follow the animal into thick cover” if they are shooting “on the edge of a thicket, on the edge of a field, or on the edge of a crop”. Finally, depending on the angles, shooting in the body also risks “meat contamination” if the shot exits through the diaphragm, liver or stomach.



*Figure 46- Yellow/red stars indicate the aim point for a) a broadside chest shot and b) a frontal brain shot (From the The Deer Initiative 2010b)*

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<sup>70</sup> This is the behaviour that some residents describe and might be construed as intimidating and confrontational in Chapter 6.

Though experienced stalkers might be aware of the right shot, in practice, “[w]hen the animal is covered in hair, it takes a bit of getting to know where to put the bullet” (Karl, Forestry Officer). This is further complicated by the relational circumstances of shooting i.e. in the public forest. Culling when there are members of the public around adds complexity, meaning numerous assessments need to be made. Shooting, therefore, is not merely about a “clean shot”, but also ensuring it is a “safe shot”. As John (Forestry officer) explains, “you’ve got to think all the time, that that bullet is going to exit that animal and needs to go into rising or soft ground behind...Cinderford isn’t a good bullet stop!”. For this reason, shooting is carried out in the daytime when the forest surroundings are easier to assess, and in locations away from villages.



This section shows that culling through stalking is a complex and careful ‘choreography’ (Thompson, 2005) of evolving practices and knowledges. Tracking and shooting involve intersecting boar movements; visualising their anatomy; knowing firearms and anticipating the trajectory of bullets; and being attentive to animate and inanimate landscape features. In other words, these skills and knowledges require rangers to become attuned to a variety of affective logics and relational atmospheres which connect actual and virtual worlds. A certain degree of coherence between these gathered entities should, theoretically, allow the rangers to make what could be understood as ‘a good kill’ (Higgin et al. 2011). That is, one that results in a fast and relatively painless death<sup>71</sup>. However, the complexity of

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<sup>71</sup> Shot animals are taken back to the larder as stealthily as possible, so as “not to rub people’s faces in it” and “not leave [carcasses] on the public display” (John). Interestingly, BDI best practice supports inspecting carcasses in the field which conflicts with the rangers’ desire to remove dead boar as quickly as possible for fear of upsetting the public. This spatial transition requires technology, notably a winch on the back of the pick-up trucks to haul animals in, and ideally, a spatial proximity between shot animals, ranger vehicles and forestry tracks, thus highlighting another compromise that occurs in public space.

killing individual boar means controlling them at a biopolitical, population scale is difficult. Their individual agential capacity, sentience and elusiveness, as well as the wider relational effects of the public forest create 'interferences' (Law 2004; Hinchliffe and Bingham 2008), making field practices contingent and relatively messy.

## **7.4 Counting boar in the Dean**

The previous subsections revealed how unfamiliarity with the feral lives and places of boar mean the FC and other governing authorities are "learning all the time" (Mark, Forestry Officer) about the extent to which they can know and secure feral bo(a)rderlands. However, critical to making boar cullable is, firstly, establishing where boar are and, secondly, how many of them there might be.

### **7.4.1 'Guestimates'**

For the first few years of boar presence in the forest, the FC had no formal practices to make them present or calculable. Rather, they kept an eye on them incidentally, as Steve (Forestry officer) explains:

*We knew they were around. They would occasionally pop up on deer surveys, or we might see them out and about. But they were quite shy. They weren't a concern. We would make notes on that, or their signs, but nothing more really.*

Surveying and monitoring it seems was fairly ad-hoc, little more than noting their traces through the forest, their irregular presence on pre-existing mammal surveys, and collating reports from members of the public. Once again, the techniques were not dissimilar to those employed by David, nor Dean residents. This informality continued until around 2009, when the DEFRA Action Plan made them a national political matter and gave the FC the jurisdiction to commence culling.

In 2008, the boar population was estimated by the FC to be 90. This figure is important as it informed a 'target population' that dictated how many boar would be culled. According to the FC, this was an "'agreed' estimate" endorsed by the Forest Verderers which was based on the wildlife rangers' field observations<sup>72</sup>. One might presume this had a systematic underpinning, perhaps an estimate based on repeatable methods and records of sightings, dead bodies and third person reports. However, this was not quite the case:

*...the number of 90...came about from a public consultation... it was estimated there was 50-60 animals dumped here in Staunton in 2004, and there were previous escapees in Chase and Penyard wood near Ross on Wye...we know that there had been some meeting of those two populations, erm, which kind of increased it from that 50-60 at Staunton to say 90. So, that's sort of where that figure came from. (John, Forestry Officer)*

Other forestry officers also highlight the lack of rigor behind this initial estimate. Mark (Forestry officer) tells me in an interview, "there was no scientific basis...it [was] just a guesstimate". It was, he says, based on a lack of discernable change in the scale and visibility of boar between 2006, when the two boar groups merged, and 2009, when the consultation was held. Surprisingly, then, this quantification appears less systematic than David's 'informal' monitoring, guided by a simple arithmetic that presumed a relatively static rather than dynamic boar population.

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<sup>72</sup> <https://www.forestry.gov.uk/forestry/inf-d-9fyfc5> accessed 08/05/2018.



Figure 47- Bank House, Coleford. FC offices for South West England

John (Forestry officer) describes the consultation as “superficial”, though perhaps “needed” at the time as it “gave us a target...to maintain”, though, he adds, “realistically, was never gonna happen”. As already established, culling aimed to minimise ‘adverse interactions’, ‘visual and physical damage’ and keep the population ‘manageable’ by maintaining it at a low level (Stannard 2011, p. 8). Importantly, however, there was also a “lack of support for eradication” (Mark, Forestry Officer). Indeed, by 2011, after two years of culling, a boar focussed public had emerged and were increasingly concerned about the uncertain population calculations, or ‘guestimates’, and publicly scrutinised both the FC culling and their boar knowledge. As the cull became increasingly contested, an issue explored further in Chapter 8, the FC found themselves under pressure to find a more systematic method of monitoring boar, a change initiated in 2011. As John (Forestry Officer) explains:

*A lot of the criticism we were getting from the supporters of the boar was how could you undertake a cull when you’ve got no idea what the population size is, it’s unscientific...we accepted these individuals’ and groups’ views that we had very little idea of what the population was, albeit we knew it was growing, so we started to undertake proper annual surveys.*



Before turning to the way in which the FC formalized their monitoring practices into something more rigorous, scientific and, consequently, compelling, it is useful to reconsider Figure 43 (page 238). This highlights the boar population trend in the forest and shows the political significance of ‘guestimating’ the boar population at 90. In Latour’s (2011) terms, the table acts as an “immutable mobile”, bringing the boar “that are far away” (p. 68) in the forest directly to a spatially and temporally detached audience. This is an example of the power of calculation and statistics, enabling authorities to translate knowledge into forms that can be ‘circulated’ through diverse, heterogenous networks (Latour 1999), and “move from worlds to words, from referents to references” (Hinchliffe and Lavau 2013, p. 262).

Reading the table appears simple, suggesting an annual increase in boar population over a ten-year period until 2018/19. However, the earlier discussion infers the table is more complex than it seems. Firstly, the annual populations (e.g. 2017/18 = 1204 boar) are based on surveying undertaken earlier in the year (e.g. March-April 2017), thus creating a temporal discord between monitoring, public dissemination, boar dynamics and the situated experiences of the public<sup>73</sup>. Secondly, the graphic translation suggests knowing boar is an orderly and objective process of counting, while inferring methods, practices and knowledges are relatively stable and continuous. Though the qualified, ‘estimated population’ hints at uncertainty, quantifying boar and making them tabular simplifies and obscures the complex and affective ‘hinterland’ of scientific methods (Law 2004). In Bowker’s (2000a) terms,

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<sup>73</sup> This temporal discord becomes especially relevant when thinking through the relationship between circulations of official wild boar knowledges, and the situated, experiential knowledges of the public, as described in Chapter 6.

by “migrating [them] across” into a single table or trend, the numbers are not “retaining context” (p662), giving a misleading impression of a stable reality, or ‘object stability’. The table, therefore, could be understood as one point in a “cascade of ever simplified inscriptions” (Latour 2011, p. 68) that flatten the messiness of boar worlds, translating “physical, three-dimensional animal[s] into...zero-dimensional number[s]” (Roth and Bowen 1999, p. 746).

Paying attention to the period before the annual census commenced is important as it shows how governing agencies use numbers to reduce and mediate both complex human-nonhuman relations, as well as their own relations with different publics. The numbers, therefore, represent ontological and epistemological interventions reflecting broader, biopolitical frames. Translating the mobile, inventive and agential boar living in the forest into a flattened, singular population informs decisions about how many ought to live or die. Quantifying nature, in other words, is performative as it makes and enacts particular realities of nonhuman life (Abram and Lien 2011; Lien and Law 2011)

#### **7.4.2 Making boar visible**

Whilst relative novices regarding boar, the FC are experienced at monitoring various deer species, which are also seen as biosecurity concerns in forests where abundant populations inhibit regenerating flora (MacMillan 2004). Among various possible methods used to establish abundance and density, the FC have carried out thermal imaging and distance sampling for several decades (Gill et al. 1997). Indeed, after their initial (re)introduction in the Dean, boar would occasionally appear on surveys, as noted by Steve (Forestry officer) earlier. From 2011, political pressure led to the FC more definitively transferring these techniques to monitor boar. This appeared to be a decision made to distinguish FC knowledge production and data from that of publics who doubted their authority and voice. Moreover,

Simon (government agency representative) suggests it was also important for the FC to “find ways of better understanding boar...to protect woodland ecologies...and find populations where people are happier with boar”. ‘Tinkering’ with and formalising methods, therefore, was both a defensive response to criticism, and one that practically contested the FC’s sense that some people believe they “want to kill anything that moves” (John, Forestry officer).



**DUAL CHANNEL  
DAY/NIGHT THERMAL BINOCULAR**

## FLIR Recon® B2-F0



The FLIR Recon® B2-F0 multi-sensor binocular combines long-range imaging and target geo-location in a compact, portable, lightweight package. Integrate B2-F0 into a remote kit for wireless operation and live video streaming. Add on a 2.5x extender in the field to increase target range to >10km for vehicle-size targets. Delivering crisp, clear thermal and visible imagery for target identification at maximum standoff, the Recon B2-F0 gives forward observers the flexibility and performance required on today's battlefield.

The laser rangefinder's single pulse design delivers rapid and highly accurate target engagement. Its operating wavelength is beyond the view of image intensifiers, which enhances operator safety by not revealing their position. B2-F0's extreme sensitivity, narrow FOV, and MIL-STD-810-F ruggedness result in optimized range performance and increased situational awareness for a wide variety of missions, including artillery observation, sniper spotter, surveillance, and target acquisition.

**FEATURES**

**POWERFUL MULTI-SENSOR CAPABILITY**  
A 640x480 cooled InSb MWIR and color CCD camera (additional uncooled sensor and stabilization available) provide superior day/night operation.

**FLEXIBLE DISPLAY VIEWS**  
Split-screen display, two fields-of-view, perfectly matched zoom settings, GPS, DMC compass, and laser rangefinder deliver short, medium, and long-range reconnaissance.

**LIGHT YET RUGGED**  
At 8.7 pounds with batteries, the Recon B2-F0 reduces operator fatigue for long-duration missions without sacrificing MIL-STD-810-F hardening.

**SIMPLE MISSION-SPECIFIC CUSTOMIZATION**  
An operator selects mission-critical features from an intuitive menu, which then automatically configures the camera for operation. No pre-mission programming required.

**ADD STANDOFF RANGE**  
The optional 2.5x extender installs without tools on a bayonet mount to increase range performance beyond 10 km.

**APPLICATIONS**

- TARGET GEO-LOCATION
- RECONNAISSANCE
- SURVEILLANCE
- SITUATIONAL AWARENESS
- FORCE PROTECTION

Figure 48- Promotional material for the FLIR Recon B2-F0 (from FLIR website)

Simon (government agency representative) describes in an interview how this new approach to monitoring unfolds. It is, he says, about establishing routines,

repeating transects along selected forest routes, using familiar technology and systematically recording data. Ideally, it is an ordered and prepared assemblage, or choreography, of movements, devices and humans. Three officers head out into the darkness: one driving; one scanning; and one recording data on deer and boar, groups and individuals, age, and distance. The vehicle, effectively a 4x4 pick-up truck with the thermal imaging camera fixed upon a tripod in the cargo bed, is affectionately referred to by Mark (Forestry Officer) as “The Popemobile”. The camera’s need for smoothness, as well as its heaviness and bulk, means that transects are best suited to areas with hard forest tracks. John (Forestry officer) jokingly explains, that “they also need to be relatively flat...it won’t go through a valley to see what’s on the other side”. The transects, though selected with the intention of repetition, were originally opportunistically chosen, dependent on the forest access networks and routes that suited this technoscientific assemblage. The possibility of monitoring and knowing boar presence, it seems, is partially determined by the forest topography, its geological forms and the firmness of soil that forms off-road tracks.



*Figure 49- Example thermal image (from the FC website)*

As part of the monitoring assemblage, the thermal imaging camera is critical, acting as an ‘inscription device’ to translate the mobile, lively animals in the forest into

static images. The camera itself, has an interesting geopolitical background, one that connects boar surveillance to security matters elsewhere. As John explains, the camera is;

*A very expensive bit of kit from America. Erm...I think it cost \$90,000 or something. It's like military grade. We had to track down a special import licence to get it, and... keep track of where it is, so it doesn't get into the black market and fall into the wrong hands. It's got far too many functions, that we would never use. Laser guiding, all sorts of stuff last seen in Helmand Province!*

Laura, another forestry officer, explains in a presentation, that thermal imaging requires working at night, when “anything hot glows like a light”. Without the camera, there would be no census, for it allows the surveyors to attune to mammalian warm bloodedness. Identifying and recording boar is about finding bodies that emit heat at night, when the wintery forest is cold, and lifeforms stand out through distinct thermal signatures. These then travel along ‘a chain of translations’ and are ‘economised’ (Latour 1999) into spatially recorded, statistical data. However, despite the promise of the technology and the choreography of heterogenous components, making boar visible in the forest is still not straightforward. In-situ monitoring is contingent and challenges routine data collection. It is as dependent on unpredictable nonhuman worlds and materialities as it is human systems. Therefore, the dynamism of the forest assemblage affects coherence and the ability for different practices to hang together. Firstly, the irregular forces of the weather can become problematic for the high-tech FLIR Recon B2-FO thermal imaging camera:

*For all that it is very fancy, expensive, erm...it doesn't work in the rain. If you try and use it in heavy rain, it just detects the thermal signatures of all the rain drops. So, you're looking through and all you can see is just a blur, as though you're looking through a tv that's not tuned in. (John, FC Officer)*

As well as rain- not an improbability in the Dean- irregular, violent storms can prevent access along intended transects routes, when fallen trees might block forestry tracks and require changes to the monitoring schedule. Negotiating unpredictable, inclement weather is an issue, something intensified by conducting monitoring in late winter/early spring. This, itself, is also partially determined by the complexities of more-than-human research and the seasonal changes described in Chapter 6. Specifically, the dramatic changes in the structure and scale of bracken and other vegetative growth transforms the forest. In spring and summer, this restricts the camera's ability to identify animals in dense understorey. Monitoring, therefore, is a process that must work around the complexity of the forest and its constantly shifting more-than-human atmospheres:

*It doesn't work through thick vegetation...You know that there might be something in there, but the vegetation still obscures a lot of what you have... but that's one of the reasons why we tend to do the, erm, surveys at the end of the winter. Well, obviously the thermal imaging looks a lot better in the cold, so you get that differential. You know, non-living objects quickly lose their thermal signature at night, so you're not wasting time staring at a rock!... And obviously the vegetation has died down so...you're able to see, hopefully, what is there, and so it is consequently a lot more accurate. (John, Forestry Officer)*

According to the FC, monitoring has been improved incrementally over the last couple of years, particularly since it has been carried out by rangers, as opposed to contract workers; "Our rangers know the difference immediately between a deer and a boar!", John jokes. This, however, is a salient point, for the FC rangers, as shown through their culling, have established a rich, situated knowledge of both the Dean and its animal occupants. As with David's work, surveying in the forest is not, in Ingold's (2000) terms, an abstracted practice undertaken 'on' a forest, but one that interacts with multiple agencies 'within' it. Effective in-situ boar monitoring is, like other scientific practices, "an inescapably local practice" (Livingstone 2000, p. 293; see also Bear 2006; Kohler 2002). However, though the

final projections and description of the census (described in the following subsection) suggest an objective and smooth gathering of data, as with other research, it is apparent the field 'expertise' of rangers benefits data collection (see Waterton 2002; Lorimer 2008; Lorimer, 2015). Successful field practices- whether culling or monitoring- require an untranslated 'knowing around' (Hinchliffe et al. 2005) and 'attunement' to the affective ecological and corporeal charisma of nonhumans (Lorimer 2007b), in this case boar. Furthermore, field practices are uncertain, ambiguous and require flexibility, or "open links" in the chain of knowledge production (Waterton 2002, p. 188), if the contingent, more-than-human field is to be adequately negotiated and formally translated by science.

### **7.4.3 Virtual boar**

In-situ monitoring is only part of the process of undertaking a thermal imaging census, for field data needs to be transformed into a population estimate. Like many other ecological practices, boar research erodes boundaries between the lab and field, showing seemingly 'noncoherent' practices (Law et al. 2014) to be "parts of a common culture" (Kohler, 2002, p. 1). Population estimates require computer modelling and different kinds of expertise, turning the census into a multi-sited project connecting the FC headquarters in Coleford, FR Alice Holt Research Station in Farnham and, more recently, a university in East England. These sites are part of a topological network with multiple 'centres of calculation' (Latour 1993) that translate boar into a complex ecological algorithm. Modelling, thus, introduces new spatial relations as boar are translocated to distant locations as images and data.

Whereas some wildlife censuses- usually of rare species- record, count and translate specific individuals in their totality (Lorimer 2008), this is not the case with thermal imaging/distance sampling models. Images of boar do not make these individuals themselves important, but they are effectively translated into a representative, generic boar and then amplified throughout the forest to produce an 'estimated population', as shown in Figure 43. Distance sampling is carried out

because you cannot see everything in the forest (Gill et al. 1997), as explained by Laura (Forestry officer) during a presentation:

*...when you do a transect, you see things that are closer to you...The further you go away, the less you see...you can use this to model the distribution of animals...you have something like a core...you have the distance from where you are where you can see everything, and this number of animals can be used to model across the forest to estimate the numbers.*

The actual boar present in thermal images are numerically projected across the forest using a program called DISTANCE<sup>74</sup>, effectively creating a virtual population. However, for an algorithm to be more accurately processed, boar need to be given attributes relating to, amongst others, population growth (requiring data on age and sex composition); average fecundity and pregnancy rates of the reproductive population; and juvenile and adult mortality rates. This is a necessity for the modelling process, but it also reflects a significant, ontological decision, once again, to reduce individual animals (as thermal images) to one of a species (by projecting general attributes on to them). In other words, boar difference is flattened (see Hinchliffe et al. 2005; Lorimer 2012; Buller 2013a) as the model produces a homogenous, 'estimated' *Sus scrofa* population which, in turns, is intended to inform a population-scale cull. However, as the increasing estimated populations in Figure 43 show, various interferences mean culling has been ineffective at maintaining the static, intransient boar population the 'target population' desires. It

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<sup>74</sup> This is a programme based on R software designed by researchers at St. Andrews University. <http://distancesampling.org/>

seems boar, when ontologically flattened to a population, have thus been too feral to adequately control.

#### **7.4.4 In the larder**

The previous subsection noted the importance of boar 'attributes' to computer models. In some early, rudimentary models- such as the one produced by MAFF researchers- boar were formed from a constellation of secondary datasets gathered from European studies. Estimated populations and projections were, essentially, conglomerations of European boar data. However, over time, more locally relevant data has been accumulated, primarily from culling;

*We now collect a lot of, erm, reproduction data from the culled animals, from the sows, and that can be used to go into a population model as well...we can use that as part of forward projecting populations. (John, FC Officer)*

As culled boar are brought back to the FC larder in Parkend, not only are they inspected for disease (as described in the following subsection), they are also analysed to collect data on fecundity, age and weight. Along with the carcasses of traffic casualties, the culled boar help improve the accuracy of the population estimate. This, once again, reiterates the performative interrelation of surveying and culling, and the ways in which references circulate in multiple directions to inform, and be informed by, different biosecurity knowledge practices (Hinchliffe and Lavau 2013).

The Castlemain larder is a sense of pride for the FC. Mark (Forestry officer) says it cost £450,000, thus making it "one of the best in Europe", whilst Karl (Forestry officer) describes it as a "brand-new, state-of-the-art facility". It is large, allowing six people to work alongside each other, with a lowered floor and high hanging rails boosting its capacity to hold a hundred boar carcasses. Importantly, it also has high-

tech lifting and chiller facilities, as well as a separate area for handling and incinerating suspect and damaged carcasses. The larder does not only allow for a best practice, but also exudes an unrivalled professionalism to biosecurity and wildlife management.



*Figure 50- FC Castlemain larder (near Parkend)*

According to Karl, boar fecundity can be understood by collecting the uterus of culled sows and looking for placental scars, embryos and corpus luteum<sup>75</sup>. In the Dean, these internal assessments suggest a potential reproductive rate of 6.7 piglets per sow<sup>76</sup>. The FC rangers also assess the age of culled individuals, a process a requiring a similar knowledge of internal boar bodies. Though some stalkers claim

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<sup>75</sup> This is a hormone-secreting structure that develops in an ovary after an ovum has been discharged but degenerates after a few days unless pregnancy has begun- from dictionary.com

<sup>76</sup> This data was primarily carried out by Forest Research biologists, though the FC rangers also carry out such analysis.

to judge age based on size, boar vary substantially in different locations and this method is perceived to be relatively inaccurate. A preferable way is to assess age by tooth and jaw analysis, knowledge gathered from experience and reference texts. Karl explains how teeth form differently; the ages at which larger teeth break through; the gradual formation of a ridge on the face of teeth over time; and the way older teeth wear, smooth and flatten at their tips.

This complex knowledge of boar biology, gathered from reproductive tracts and jaws, forms a different mode of monitoring that works with the ecological knowledge gained in the field. For virtual numbers of boar to be accurately estimated, it is necessary to know individual anatomies through inspection and autopsy. The rangers' knowledge assemblage appears increasingly broad- they are marksmen, 'calculators' (see Lorimer 2008), surgeons and biologists.

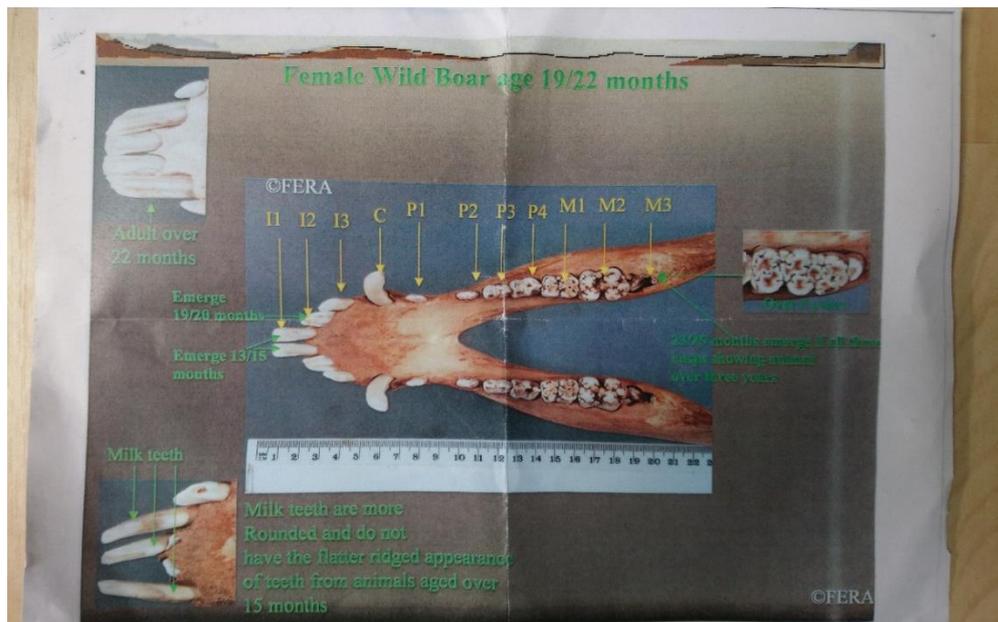


Figure 51- Copy of datasheet to help age boar (handed out at a boar presentation)

However, despite the improving localized data on fecundity, age and traffic accidents, there are still gaps that frustrate the modelers. For Stephen (government agency representative), these 'open links' create uncertainties that potentially weaken population estimations and, consequently, ideal cull targets. Stephen does

not believe the algorithm produced in DISTANCE is wrong, but, as a scientist, would “prefer it to be tightened up” so that it can more accurately estimate culling quotas. However, he acknowledges that the complexity of boar lives and messiness of the forest mean there will always be gaps. Currently, he says they don't know what juvenile mortality is; why and how many individuals die; or, critically, boar migration in and out of areas that are being monitored i.e. the statutory forest. Knowing boar and the forest in their entirety is almost impossible as, in Stephen's words, “there are so many things going on” and “you can't see everything”, something inferred through the population's estimation<sup>77</sup>.

The model might be seen as a way, in Latour's (2011) terms, of ‘drawing things together’ to form a specific, biopolitical translation of boar. ‘Economising’ (Latour 1999) boar through statistics reduces the messiness and heterogeneity of their presence and facilitates a sense of stability and order. For the FC, this is vital as it enables their translation of boar to be circulated and asserted through different contexts and to a diverse audience. Furthermore, calculating and estimating their presence is perceived as important to the broader objective of biosecurity and control. Critically, modelling is multiple temporal, creating statistics about possible present and future boar populations. Modelling, therefore, is about helping secure the immediate future, whilst also helping authorities pre-empt and intervene in possible future bo(a)rderlands (Anderson 2010; Barker et al. 2013; Braun 2013).

## **7.5 Monitoring microbial presence**

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<sup>77</sup> As shown in chapter 8, this is a source of contention.

In-situ monitoring and estimating populations has proved to be a critical component of official constructions of boar by government agencies. However, there is another vital aspect of monitoring that focuses on securing the riskiness of (re)introduced boar. This subsection turns to epidemiological biosecurity and the practices of knowing viruses, infections and disease. Once more, this involves different affective logics and expertise that expand boar topologies, linking the living population in the Dean to the larder in Parkend, as well as government laboratories found further afield. This concern with microbial boar assemblages- viral and bacterial- broadens the scale and focus of FC monitoring from securing their own land and minimizing the ‘impacts’ in surrounding settlements, to potential intra-actions with agricultural spaces and lives, a more commonly discussed biosecurity concern (Bingham et al. 2008; Barker et al. 2013).



*Figure 52- Culled, gralloched boar in a larder (The Deer Initiative 2010a)*

As part of disease monitoring, wild game carcasses that are sold legally for consumption in the UK must be inspected and tagged by a “trained person” who is also obliged to report:

*[U]nusual behavior in the animal before culling; any abnormality observed in the gralloch, or carcass; any condition which might lead one to suspect infection with a notifiable disease. (The Deer Initiative 2010a, p. 1)*

Though gralloching is primarily undertaken to prevent contamination of meat by quickly removing guts and, consequently, bacteria from a carcass, it also enacts a mode of health monitoring, not just of individuals, but also populations. Like many other biosecurity practices, therefore, it fulfills multiple functions of sanitation and surveillance (Hinchliffe et al. 2013). Here, however, the interest is primarily in the practices that relate to statutory biosecurity concerns, namely, zoonoses and notifiable diseases.

### **7.5.1 Zoonoses**

Zoonoses are infectious diseases- viral, bacterial, fungal or prion- that can be passed between humans and (nonhuman) animals. In accordance to EU Food Hygiene Regulations enacted in 2006, the carcasses of all swine<sup>78</sup> must be tested for *Trichinella* if they are intended to be consumed, whether privately or on the commercial market (FSA 2010). Trichinosis is a disease related to the larvae, or trichinae, of *Trichinella spiralis*, a nematode worm. Whilst both domestic and wild

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<sup>78</sup> This is no longer strictly the case. In June 2014, a new ‘risk-based’ approach was implemented in the EU which made testing compulsory only for holdings not officially defined as ‘Controlled Housing Conditions’ (CHC). These were introduced with strict guidelines and risk assessments to allow carcasses to be sent for processing before tests are received at the slaughterhouse, thus making for a faster ‘production time’. Breeding boar and sows are exempt from this legislation (AHDB, 2014).

animals might be unaffected as reservoirs and show no overt signs of infection by larvae, both humans and nonhumans can contract trichinosis by consuming raw or undercooked meat, or raw products such as sausage or ham. Though biosecurity legislation seeks to minimize risk in humans and livestock, wild animals that scavenge on carcasses or food waste are also at risk of infection, raising concerns that boar have the potential to both be an unaffected vector or infected victim (Gibbs 2016).



Figure 53- *Trichinella Spiralis* nematode (APHA 2017)

Human infection can cause a range of symptoms from diarrhea, stomach and muscle cramps, fever and headaches, to serious effects on vital organs leading to meningitis, pneumonia and, potentially, death. Therefore, according to government advice, testing helps “protect the public from coming into contact with infected meat and provide national surveillance data on the prevalence of any possible infection in wildlife in the UK” (FSA 2010, no page number). Despite no confirmed cases of trichinosis in humans since 1969 or pigs since 1979, the disease is widespread in Europe and EU legislation has been tightened.

For some governing authorities and agricultural actors, boar movements across farm boundaries and interactions with domestic pigs raise concerns that trichinae larvae might be mobilised between species. Therefore, as potential sources of infection, culled boar are part of “the *Trichinella* monitoring system” (p. 4) to

facilitate continuing “risk-based surveillance” (The Deer Initiative 2010a, p. 2).

Surveillance, according to Karl (Forestry officer), sounds relatively straightforward:

*You get the forms online, you send the sample off, and they send it back to you in a few days telling you that you are clear or not clear. It is free, so there is no reason why we shouldn't be doing that...why risk it? (Karl, FC Officer)*



*Figure 54- Series depicting a) the diaphragm, b) how to cut a sample, c) a guide to the sample size, and d) the sample in an appropriate container (FSA 2010)*

Disease surveillance requires a specific, anatomical form of knowledge and intimacy with boar which is accumulated by gralloching culled animals. This intersects with the knowledge acquired from shooting and needing to make ‘clean kill[s]’, highlighting once again how ‘noncoherent’ practices inform one another. In the larder, taking a sample of the diaphragm begins by carefully opening a boar carcass as it hangs suspended by its hind legs on a winch. Karl explains how for both males and females you start around the genitals and anus, and then cut downwards to the sternum. With males, however, “Step number one...is to take off the pizzle”, a task undertaken with caution as a scent gland is located behind the base of the penis, and “cutting into that, especially if the boar has been rutting...would be pretty

pungent". Making a mistake could contaminate the meat and make it unsuitable for consumption. Karl continues:

*Then you split the skin from around the sternum in order to open that up to get the saw in there...you then split the sternum... and using the fingers making sure you don't burst the stomach with the intestines...You split it down the middle, just get in there and pull the anal passage down and through and then start working your way down.*

The process is, it seems, is one of care and force, using tools and fingers to ensure that the carcass is not damaged. This is motivated both by economics- the FC sell carcasses and their value is determined by their condition- as well as pride in doing a good job. Through experience, it is possible to acquire further understandings of what makes boar, this time as carcasses, different to other animals:

*With the deer hanging up like that, everything just comes out free. You have a boar up like that and everything just stays where it is (he refers to the entrails). So, you have to get in there, cut the connective tissue where you need to with a knife, obviously being careful because you don't want to burst the guts and the stomach. Just work it down, work around the diaphragm, and everything starts to drop out, to drop down to the floor...then cut it off just above the larynx.*

At this point, after the boar has been opened up and the insides spilled, it is possible to take a sample from the diaphragm, ideally a "thick meaty part ...free of fat and other tissue" (FSA 2010, p. 5). This clean cut should be refrigerated rather than frozen to avoid destroying the trichinae prior to postage. This sample is then sent to the APHA National Reference Laboratory in Bury St. Edmunds, Suffolk, demarking a point at which different government agencies with alternative knowledges practices, are brought together by wildlife biosecurity. This chain of translations sees the health of boar individuals and, by association, populations in the wild, 'economised' through samples of tissue gained by the intimate field

practices and butchery skills of the FC officers. These, in turn, are delivered to APHA scientists who, on behalf of the FSA, carry out testing and inform officers on the presence or absence of trichinae within 24hrs. This mode of biosecurity monitoring, therefore, connects the visible, macro-mobilities of boar to the micro-circulations of emergent, larval lives that are perceived as harmful (see Barker 2015). Such biosecurity practices, as Hinchliffe et al. (2016) highlight, do not merely relate to human-nonhuman interactions, but also the ways in which the more-than-human world intra-acts.

		<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;">Lab ref</div>
<b>Trichinella Testing Submission Form for Feral/Wild Boar</b>		
<b>Laboratory of Destination:</b> APHA Parasitology Group (Wildlife) National Reference Laboratory: Trichinella & Echinococcus, NAFIC Site Sand Hutton, York, YO41 1LZ		<b>Contact:</b> Jane Learmount Tel: 02080 262433 Email: jane.learmount@apha.gsi.gov.uk
<b>FOR COMPLETION BY HUNTER SUBMITTING THE SAMPLES</b>		
Unique identification number:		
Name: Address:  Telephone: Email:		
<b>Preferred method for communication of results (circle):</b> Tel / Email <i>Please provide number/email if different to above</i>		
Location of kill:	Map reference (if available):	
Date of kill:	Sex of Boar (circle): M / F	
Age of Boar (circle): <ul style="list-style-type: none"> <li>• Up to 6 months</li> <li>• 6-12 months</li> <li>• 1-2 years</li> <li>• 2-3 years</li> <li>• 3+ years Adult</li> <li>• Unsure</li> </ul>	Sample Type (circle): <ul style="list-style-type: none"> <li>• Pillar of Diaphragm</li> <li>• Other (please state)</li> <li>.....</li> </ul>	
No. samples pooled:	Date sent to Lab:	
Signature:		
<b>FOR COMPLETION AT LABORATORY</b>		
DATE ARRIVED:	<b>TEST RESULT (circle):</b> <ul style="list-style-type: none"> <li>• Negative</li> <li>• Suspect Positive (Re-test Required)</li> <li>• Confirmed Positive after Re-test</li> <li>• Confirmed Negative after Re-test</li> <li>• Inadequate Sample (Re-test Required)</li> </ul>	
DATE TESTED:		
SIGNATURE:		
<b>DATA PROTECTION</b> For information on how we handle personal data please go to <a href="http://www.gov.uk">www.gov.uk</a> and search Animal and Plant Health Agency Personal Information Charter.		

Figure 55- Trichinella testing submission form

## 7.5.2 Notifiable diseases

Testing for *trichinella* highlights how boar biosecurity is concerned with the risky parasites that might move fluidly from wild and domestic nonhuman life to humans themselves. However, perhaps of more prescience are the notifiable diseases and viruses that are required by law to be reported due to the multiple risks they carry for domestic animals and social-economies. These are both endemic, in the case of bTB and Foot and Mouth, or exotic, in the case of Classic and African Swine Fever (CSF/ASF). Ben, a government agency representative I see presenting on wildlife diseases, describes exotic 'notifiables' as "the ones that don't occur in this country...diseases we don't want". These currently circulate in mainland Europe and are increasingly perceived as threatening through their topological entanglements with trade, tourism, transport and travel (Waage and Mumford 2008; Hinchliffe et al. 2013).

Though bTB in wild boar is not a major biosecurity concern for government agencies due to their status as 'dead-end hosts', the case is markedly different for Classic and African Swine Fever (CSF/ASF). Whilst there have been occurrences of CSF in the UK, over recent years ASF has circulated through Europe and Asia, having significant economic and welfare impacts and resulting in drastic culls of both boar and domestic pig (More et al. 2018). In the UK, a government contingency plan, the 'Disease Control Strategy for African and Classical Swine Fever in Great Britain' (DEFRA 2014a), outlines its monitoring and management protocols. As the same genus, boar and domestic pigs are both swine fever hosts, and the control strategy covers both. Boar, as potential hosts, are framed as a biothreat to the pig industry and so monitoring their health, as potential viral vectors, is integral to ASF control.

As the UK is an island, anxieties are currently less about direct transmission or contact, and the focus is on external borders and trade, a standard approach to

'borderline' security (Hinchliffe et al. 2013; Outhwaite 2013). ASF is usually transmitted orally or through the nose, faeces and body fluids, and as Ben outlines, "there are no wild boar coming into this country". Importantly, however, it can be transmitted indirectly on equipment, vehicles, people and infected pig meat products. Therefore, carcass inspections, once again, are at the forefront of security practices and where initial assessments of potential notifiable diseases are made, acting performatively and, potentially, influencing future culls and the rigor of management practices.

## **7.6 Chapter Summary**

This chapter considered the complex, heterogenous knowledges, technologies, skills and encounters that co-constitute official government practices aiming to know, control and monitor feral bo(a)rderlands. These choreographies (Thompson 2005), forming "ecologies of knowing and securing" (Hinchliffe et al. 2013, p. 259), have been shown as contingent, precarious and reveal the continual "unfinished business of making [life] safe" (Hinchliffe and Bingham 2008, p.1542). Relatedly, the chapter has also shown how governing authorities have needed to constantly 'tinker' (Mol 2010) with established and novel practices to make unsanctioned wildlife present and amenable to modes of ordering reliant upon statistics (Enticott 2001; Bear 2006; Day et al. 2014; Boonman-Berson et al. 2018). Such calculative politics make boar topologically fluid as they circulate from the field, through images, to models, databases and laboratories (Mol and Law 1994; Law and Lien 2013). They also make boar temporally fluid by projecting possible future populations based upon data from the present and past, imaginaries that inform ontological decisions about how many should live or die. Furthermore, these official practices also show how official knowledges frame boar as indeterminate assemblages that embody risks and harbor other risky lives. In other words, they are, within themselves, bo(a)rderlands.

Though authorities rely upon complex technoscientific assemblages to establish and differentiate official translations of wildlife, these are shown to emerge from and in relation to more affective logics accrued in the field (Hinchliffe et al. 2005; Lorimer 2008; Nygren and Jokinen 2013; Mason and Hope 2014). Indeed, they might even appear similar to the situated knowledges of some residents in the Dean. Culling and monitoring, therefore, are place-based practices (Kohler 2002; Lorimer 2015; Hodgetts 2018), always undertaken in relation to multiple, nonhuman agencies and their unpredictable 'interferences' (Law 2004). Their success relies upon an 'attunement' (Despret 2013) to boar and awareness of their more-than-human socialities (Latimer and Miele 2013; Tsing 2013). This, therefore, speaks of another unspoken borderland, whereby different knowledges illicitly come together to inform official practices.

Despite the calculative politics informing culls, boar are always somewhat elusive. The FC rarely cull the numbers they want, thermal imaging only captures small numbers of boar, and modelling appears to lack data. Rather than being 'domesticated' (Roth and Bowen 1999; Lorimer 2008) by modes of ordering, boar always appear partially unknowable, unattainable and elusive. Though official practices have tried to flex and adapt to order boar indeterminacy, boar have remained feral, uncertain and somewhat out of reach.

## FERAL POLITICS

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### 8.1 Introduction

As previous chapters have highlighted, the mobilities and behavioural ecologies of boar have blurred spatial and moral boundaries in their (re)introduced locations. Feral bo(a)nderlands appear to be co-constituted of uncertain and precarious lives, places and practices that have emerged and been reconfigured through their relations with boar. This chapter explores how boar and their material-semiotic assemblages are bound up in a contested, 'feral politics' that once more entangles local matters and relations with national concerns relating to boar.

To understand the complex and messy nature of boar politics, attention shifts to consider how policy interventions have unfolded, been enacted and subsequently contested by different groups and actors seeking to make sense of boar and their governance. Political developments around the Dean reflect a growing sense that sharing space with boar has become increasingly tense, not purely because of boar ecologies and human-boar relations, but also because of the social friction caused by different boar ontologies and understandings of their belonging.

The chapter focuses on some of the key interventions of the 2008 DEFRA Action Plan to consider how boar were officially framed by government and how their presence was expected to be governed, before considering some of the contestations that have developed in the Dean, partly in relation to the Action Plan's interventions. Firstly, this strategy emphasised an approach to wildlife governance which dispersed responsibility among a range of actors, highlighting some of the tensions among different publics. Additionally, the strategy also

identified boar as 'feral', contributing to debates around nonhuman belonging and 'wildness'. Relatedly, these interventions have also fed into contestations about sovereign control and the practices of the FC, as described in Chapter 7. Broadly speaking this chapter, explores issues relating to nonhuman classification and hierarchies, multi-actor governance, and social and institutional distrust.

## **8.2 An 'increasingly complicated' situation**

This first subsection refreshes and further grounds the stories told in previous chapters. It first pays further attention to the emergence of government policy on boar, namely, the DEFRA Action Plan, before then considering how this was enacted by key Dean actors in 2009. Finally, it reflects on the political atmosphere of the Dean during my fieldwork, highlighting how the rhythms and practices described in Chapter 6 have congealed into discursive debates about (dis)order and friction in Dean bo(a)rderlands.

### **8.2.1 Establishing (dis)order**

As commented previously, boar (re)introductions, including in the Dean, appeared prior to any government strategy addressing their autonomous presence. However, following the consultation, the DEFRA Action Plan finally clarified their status and how they should be governed (DEFRA 2008). Despite the possibility of eradication, most respondents felt boar should be allowed to remain, albeit with some kind of management due to concerns, primarily, over agricultural security (DEFRA 2006). An important point raised by "many respondents", the consultation noted, was "that wild boar are a former native species...[and] have a right to exist in the countryside" (DEFRA 2006, p. 12), thus reflecting a moral sentiment that boar, despite their unsanctioned (re)introduction, belonged. In response to the consultation and accompanying risk assessments, the Action Plan concluded "primary responsibility for feral wild boar management lies with local communities and individual landowners" (DEFRA 2008, p. 1).

The strategy also reiterated the key principle for managing wildlife in England is one of “no government intervention”, with this only occurring “where there is a sound reason and evidence for doing so” (ibid, p. 3). Boar management, therefore, seemingly mirrored the broader approach to wildlife management in the UK, where species killable as ‘game’ are legally defined *res nullius* (nobody’s property), a longstanding legacy from Norman times (Phillip et al. 2009). This strategy, Putman et al. (2011) suggest, is the least ordered in Europe on account of its negligible state intervention; absence of organised management units; relaxed licencing protocols; and lack of co-ordinated cull quotas, statistical reports or hunt bags. Moreover, this approach also reflected the broader, modern governmentality of multi-actor governance, thus diffusing ‘responsibility’ and decision-making from the government through other parties (Rhodes 1996; Hajer 2003; Swyngedouw 2006).

Though boar were a cause of concern for many respondents, many others felt they were ‘native’ and belonged in England, and DEFRA appeared keen to avert the kinds of public controversy which often surround organised species control programmes, whether of ‘native’ (Dandy et al. 2012; Crowley et al. 2017b; von Essen and Allen 2017) or ‘non-native’ and ‘invasive’ species (Crowley et al. 2017a; Crowley et al. 2018). Importantly, however, the Action Plan emphasised:

*[t]he English countryside and our way of life have changed substantially since wild boar became extinct and there is therefore a degree of uncertainty concerning the impacts” (DEFRA 2008, p.4)*

As boar (re)introduction had not followed IUCN protocols (IUCN/SSC 2013) and they were felt to be a risky, temporally asynchronous presence, the Action Plan framed them as ‘feral’ rather than ‘wild’ animals. Though there was no singular definition, this was partly because they became “established as a result of escapes and deliberate releases from wild boar farms...[and] DEFRA does not condone the illegal release” (DEFRA 2008, p3-6). Additionally, there was also uncertainty about their genetic heritage. Whilst this mode of ordering reflects normative understandings of ferality i.e. describing nonhumans “that have lapsed into a wild from a

domesticated condition”<sup>79</sup>, it is a political technique laden with values and practical implications (Donaldson and Kymlicka 2011; Gibbs et al. 2015; Rutherford 2018), such as making boar more readily ‘cullable’. Though boar were allowed to remain present and live with a degree of autonomy, ‘local communities’ and ‘individual landowners’ were given the flexibility to control them and their perceived risks. ‘Ferality’, however, not only blurred notions of belonging, (dis)order and nonhuman difference, it simultaneously gave room for contestation and friction.

### **8.2.2 Establishing ‘the best possible outcome’**

Though the two initial populations of boar had wandered into the core forest around 2006, it wasn’t until the end of 2008, after the published Action Plan, that the Forest of Dean District Council (FODDC) Scrutiny Committee first discussed their presence (FODDC 2008). By this time, as with other wildlife ‘controversies’ surrounding (re)introduced species (Crowley et al. 2017b; Sandover et al. 2018), local and digital media had become key sites of contestation, reporting risky encounters in the forest and surrounding settlements<sup>80</sup>, as well as publishing counter-opinions highlighting the need for understanding, patience and learning ways to co-exist<sup>81</sup>. To investigate “the boar situation” (FODDC 2009, p. 6), the FODDC set up a ‘boar task group’ and held an event in January 2009 to:

*identify ways in which the council could work with the Forestry Commission and any other interested parties in seeking the best possible outcome for managing the situation regarding wild boar within the Forest of Dean. (ibid, p. 6)*

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<sup>79</sup> "feral, adj.2." *OED Online*, Oxford University Press. [www.oed.com/view/Entry/69302](http://www.oed.com/view/Entry/69302)

<sup>80</sup> <http://news.bbc.co.uk/1/hi/england/gloucestershire/7220272.stm>

<sup>81</sup> [http://www.bbc.co.uk/gloucestershire/content/articles/2007/11/22/wild\\_boar\\_feature.shtml](http://www.bbc.co.uk/gloucestershire/content/articles/2007/11/22/wild_boar_feature.shtml)

At this meeting and subsequent ones, a variety of “interested parties” voiced their perspectives and experiences, including the Deputy Surveyor of the FC, Parish and Town Councillors, ‘Animal welfare rights groups’, a specialist wild boar consultancy, a local ecologist, local agricultural interest groups, as well as members of the public. The committee chairman also received over 100 letters and emails from the public, the majority voicing worries about boar encounters, aesthetic ‘impacts’, and physical, economic and ecological ‘damage’. The FC, specifically, pointed out the possibility that some boar were ‘hybrids’, that their populations were difficult to estimate, and that dealing with them on land owned by councils, public organisations and schools was a problematic issue.

This task group was the FODDC setting up a ‘regional management’ plan that involved the ‘community’ and ‘individual landowners’. As the largest, most geographically central landowner, and most assimilated government ‘delivery partner’ in the Dean, the FC were integral. They, themselves, “hoped that by combining efforts and addressing the situation collectively, they [the boar task group] might be able to produce the best possible outcome for all concerned.” (ibid, p. 3). Ultimately, the FODDC put forward a plan whereby:

*the Forestry Commission...tak[e] responsibility as the main landowner within the Forest of Dean in effectively managing wild boar and boar-like animals, wherever such animals might create potential risk and menace...[and] be controlled at a level slightly less than that in existence at this present time, but more importantly, at a level not to cause damage or harm to the forest and visitors to the forest. (ibid, p. 8)*

Importantly, to reflect divergent understandings of boar, the task group recommended culling principles that had an “appropriate closed season in order to protect pregnant females...to concentrate on juvenile animals and bachelor

groups...[and for] problem animals to be removed immediately” (ibid, p. 8)<sup>82</sup>. Though the FC “accepted” the review (FODDC 2009a, p. 5), there were a few significant amendments. Firstly, the potential for boar to breed at any time of the year led to the withdrawal of a closed season to allow year-round culling, something facilitated by boar being categorised as feral<sup>83</sup>. Secondly, there were also concerns that not all “forestland” (ibid, p. 5) was managed by the FC and, thus, boar might move through forest-villages borders. The task force concluded, critically, that this should not be an issue if FC management “encourages boar to remain in the wooded areas of the forest” (ibid, p. 5). What is noticeable, firstly, is that almost all ‘responsibility’ for management was placed upon the FC, whilst other key actors, namely, the District, Town and Parish Councils, appeared to be absolved of any. Furthermore, the desire to enact a quick ‘community’ strategy meant the issue of boar mobilities was barely addressed, a surprise in hindsight and in light of the stories described in Chapter 6, as well as wider situations in Europe (IUGB 2013; Morelle et al. 2014; Storie and Bell 2017).

### **8.2.3 A ‘turning tide’**

When I began fieldwork in autumn, boar geographies were at their broadest and human tensions were high. Newsworthy events- digging in cemeteries, gardens, verges, amenity and sports space- were commonplace. The topic of conversation in pubs and shops was often boar-related as people discussed overnight digging or

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<sup>82</sup> The report also recommended the FC introduce communication and education campaigns, liaised with the local police regarding poaching, and provided biannual progress reports to district and parish councils.

<sup>83</sup> As mentioned elsewhere, boar tend to farrow from late winter through to spring. However, if these litters are unsuccessful, they may have second litters outside of the traditional season. This has led to suggestions by participants and in meetings that boar have two litters a year, a generally inaccurate claim.

nearby sightings. I am told by many interviewees that frustration towards boar presence churns annually through the Dean in response to their behavioural ecologies. However, it also got the impression something more significant was building and that there was an intensification of not only human-boar relations, but human-human ones, too. In late October, 'The Forester' ran an editorial, headed, "Wild boar issue needs resolution", commenting that in "another week...[there is] another victim to add to the growing list...affected by this free roaming animal"<sup>84</sup>. The paper also praised a newly formed "independent 'think tank'" seeking "solutions" and "a more balanced approach" to the "eternal debate" over boar belonging and their human relations.

Sitting in a dark meeting room at Bank House, photos of old FC chiefs hanging from the walls, John (Forestry officer) explains that phone calls and emails, his "barometers of public feelings", had multiplied and shifted from "relatively benign...even enthusiastic...to something stronger and more negative". Whereas a few years earlier people called out of curiosity to ask questions about boar, now, he sighs, there are mostly complaints, comments reflecting the experiences of many other authority representatives in the Dean. Interviewing Eddie (councillor) in his office, he similarly describes increasingly disgruntled parishioners contacting him about the aesthetics of land "being chewed up", the fear of going out into the forest and deeply affective incidents like cemetery digging:

*Things are getting really nasty and very emotional...there is a growing problem...some people are being made really uncomfortable and really unhappy...as the Dean changes around them...But, all I can say is 'we are sorry' but we cannot do anything...we are not wildlife experts, just*

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<sup>84</sup> "Independent 'think tank' opened on boar problems". The Forester. October 26, 2016. The 'victim' was in reference to digging in Parkend cemetery.

*representatives of the local people...we don't have the skills to manage boar in our villages...someone needs to help us...we don't have the resources to act alone.*

Eddie is acutely aware of the divisive nature of boar and is keen to highlight that whilst he and many of his constituents believe they have a place in the forest, there needs to be a “common ground for management”. Alan, another councillor I interview, also believes the “the tide is turning”, particularly as constituents “on both sides” feel “nobody is listening to their concerns”. Likewise, Colin (councillor) tells me “without a shadow of a doubt” things are “snowballing” year on year. Whereas many agricultural actors had security concerns when boar first appeared, Colin says, residents were generally “pro-boar” and enjoyed the “novelty” of their (re)introduction. Now, however, he explains there is a growing “anti-boar sentiment” with more and more people “becoming less tolerant”.

Whilst most interviewees concur that frustrations at the boar situation are growing, there is also a sense that the voices of the “extremes”, in Colin’s words, are becoming more vociferous. Whilst those who “wish the boar away and hanker after... a time when boar weren’t here” are publicly vocal, so are those who “would be protesting about any management, no matter what”. This burgeoning, “untenable...social friction” (Eddie, councillor) is commonly framed through the binary identities, ‘pro-boar’ and ‘anti-boar’, ones which do appear relevant to some interviewees. Interviewing James (resident) in autumn, he tells me it is the first time he has visited this pub for “donkey’s years” after a “disagreement” with the old landlord who was, in his words, “anti-boar”. A few weeks later, speaking to Diane (resident), I am told she hasn’t been to an independent sellers’ fayre in her village recently because several characters there are “extremely pro-boar” and “moralise to everyone” about their views. Certainly, some people I speak to readily identify themselves as one or the other, and having a definitive stance seems to affirm both a personal and public identity.

However, most people I interview appear to drift in what Karen (resident) refers to as the “middle of the road”. For most interviewees, living with boar in the Dean is experienced as “increasingly complicated...and difficult” (Malcolm, resident). As following subsections will elaborate, as much as the external political friction, people often feel conflicted internally about the challenge of sharing space with boar, the acceptable boundaries that ought to shape this, and how they should be regulated. Though sometimes portrayed as incompatible by some actors, empathising with biosecurity concerns and supporting management is not exclusive from valuing their presence and belonging. Moreover, values, beliefs and attitudes are not necessarily fixed, but are often fluid in relation to specific events, experiences and wider social-political happenings. Reflecting the uncertainty of many residents, Nikki (resident) highlights how the binary categories “anti-boar” and “pro-boar” are somewhat misleading:

*Generally, I think it is great having the boar in the forest and people need to understand they are not deliberately causing problems...they are just being wild animals. Then somebody's dog gets gored, or you hear about these disease risks, and you think we need to be more careful, whatever that means.*

As with other wildlife controversies, developing Dean bo(a)rderlands have given rise to new publics and social collectives (see Crowley et al 2017; Eden 2016; Peltola et al. 2018). However, these publics themselves appear heterogenous and dynamic as many people grapple with boar ethics as their affective capacities change. As highlighted by Peterson (2013), though commonly identified ethical positions- eco-centric, utilitarian and animal centric- are often portrayed as incompatible, in practice these are more fluid and unsettled.

### **8.3 Contesting belonging**

*After the meeting, some of us went and sat in the bar to continue chatting. Getting a drink, the barman asked playfully if our meeting had “solved the pig problem?”. He was friendly enough, but his question seemed pertinent after the heated discussion at the end of the meeting. Was it a ‘pig’ problem or a ‘boar’ problem we had been discussing? Perhaps, it was both- maybe that is the problem. (Fieldnote, 17/01/2017)*

As the above fieldnote underlines, Dean bo(a)rderlands often appear to have different subjects- boar or pigs; wild or feral animals; native or non-native species. This subsection addresses the ways in which belonging is framed through the formal categorisations of boar as feral. Ferality is understood through several interrelated, contested logics, which are evoked in relation to other modes of (b)ordering, such as wild/domestic, pure/impure and native/non-native. First, I will consider how boar belonging is understood through spatial-temporal boundaries, before then considering how questions of (im)purity are evoked in relation to their presence. Finally, I consider how these relate to vulnerability and cullability.

### **8.3.1 Spatial-temporal (dis)order**

The 2008 Action Plan primarily relies upon a normative, spatial-temporal logic of ferality. It hints, firstly, at a deeper temporal framing of boar as a ‘native’ British species that was extirpated. Secondly, it reiterates their movement from sanctioned farm-space to unsanctioned wild space. For many interviewees, exemplified by David (government agency worker), categorising boar feral is deemed “appropriate” and encapsulates the “current stage” of their presence i.e. they were unofficial (re)introductions. This view, unsurprisingly, is shared by other government agency representatives, agricultural stakeholder representatives, as well as many residents. For example, Lorraine feels boar “are feral because they...have gone wild, instead of being truly wild ones”. This infers ‘true’ wildness is an intrinsic or fixed attribute, perhaps something unattainable for animals that, in her words, “are possibly still domesticated”, a popularly held view. In contrast,

Karen (resident), who generally shares Lorraine's ambivalence towards boar, reflects another common perspective:

*The first generation could be seen as feral, but not these ones, not anymore...They have been here for 15 years or so, right? These aren't feral, these are wild. They certainly behave like wild animals...they do what they want, go where they want, eat what they want.*

Similarly, Mike (resident), argues "they have been here long enough now...many successive generations born in the wild...the feral label should be taken away. Now, they are 'wild' wild boar". Uncertainty over these spatial-temporal logics, perhaps surprisingly, also extends to actors such as Alexandra (agricultural stakeholder representative), who is concerned about boar disease risks:

*They are feral wild boar because they have originated from escapees, which makes sense. But at some point, following generations and generations, when does an animal become a native species?*

These comments bring together divergent understandings around the permanence of spatial-temporal classifications, on the one hand, and nonhuman autonomy on the other. Why, some people wonder, are animals five or more generations removed from the original escapees regarded as feral? James (resident) rhetorically asks, "Will the government still call them feral in 1000 years? Or will those individuals finally, rightly, be called wild?". There is, it appears, an ontological discord, with some people understanding boar as a static species or population, whilst others regard them as ever-evolving individuals and social groups. As highlighted in other research, ferality appears a relational term, held in tension with varying conceptions of wildness (Palmer 2010; Fredriksen 2016; Rutherford 2018). Wildness and domesticity are, at times, understood as static and pure categories troubled by feral disorder (Lorraine, resident), or else understood as part of a dynamic continuum that shifts according to understandings of individual autonomy and (lack of) human control (Karen, resident). Such divergence reflect deeper

ontologies of nonhuman nature, as explored in earlier chapters, and the extent to whether it is fixed and controllable; or else transient and processual.

### 8.3.2 (Im)purity

The Action Plan also hinted at a further logic, one of genetic impurity, in stating it covers both “wild boar and wild boar hybrids” due to the fact “it is often not possible to distinguish between them in the field” (DEFRA 2008, p. 4). Impurity, itself, is elicited and contested in several ways- phenotypically, biologically and behaviourally. On a cold afternoon in winter, I bump into Lee, a local craftsman, at his forest workshop. As we start talking about the forest and its wildlife, he flicks sawdust off his clothes and settles onto a sawn stump. Lee lives on the edge of the forest and owns domestic pigs, so has a “special interest” in boar:

*There is a lot of rubbish out there. People don't know the real story...They are not real boar. They are feral pigs. You can see it in their physiology. They have white on their thighs. They have shorter snouts. Their bodies are a different shape. They have a different, flatter back. Curly tails...They shouldn't be here...They are just feral pigs, hybrids.*

Despite the Action Plan suggesting they are phenotypically similar, Lee feels his knowledge allows him to identify physical differences between ‘real boar’ and, in his terms, ‘feral pigs’, a difference that legitimises his belief they don’t belong and, additionally, represent a distinct biothreat to domestic pigs. Several other people I speak to comment along similar lines, stating “they don’t look quite right” (Malcolm, resident) or that “their coat isn’t that of pure boar” (Neville, farmer). Such description, however, appears incongruous with those offered by most people I interview, whether residents and forestry workers. For example, as I sit with Mike (resident) after an interview in the forest, he explains:

*It is as if you are back in the mediaeval times, watching a wild boar...like it would have been here years and years ago...a connection to the*

*past...they've made the forest wilder...it is irrelevant if they are 'pure'...[but] they are boar anyway, or at least look like them. Long noses, pricked ears, dark pelage.*

Boar morphology, it seems, is one way in which the uncertain boundaries of ferality are contested, with different knowledges contrastingly used to assert the closeness of boar to either domesticity or wildness. However, there are other concerns relating to purity and its influence on boar biologies and behavioural ecologies, notably, about the 'invasive' potential of impure animals (Frantz et al. 2012; Snow et al. 2017). Stephen (government agency representative) explains Dean boar are not "true...[and] were deliberately crossed with pigs...to make them more fecund and, perhaps, to make them more docile or something", reflecting a view repeated by FC staff who suggest biological differences might be affecting how they behave and interact with humans.

Similar views are exemplified by Harry, a representative for one of the DEFRA's official delivery partners, who believes it is important to emphasise these are not "our past native boar". He would, he says, be more supportive of their presence "if they had the proper, pure boar genetics...but these have a considerable amount of domestic pig in them...they don't reproduce the same". Security concerns about this effects of impurity are threefold. Firstly, Alexandra reflects the views of most agricultural stakeholders in worrying about the implications of "very, very prolific" reproductive rates on the breadth and speed at which boar are expanding and, subsequently, threaten farm landscapes, particularly in light of notifiable disease possibilities. Likewise, some conservation stakeholders, such as Alison, worry that the "unnaturally high fecundity...will harm really important and vulnerable species". Whereas official stakeholders are cautious over their language, many residents are not. Finally, for residents who are ontologically unsettled by boar presence, impurity becomes one of numerous logics that are used to make sense of feelings that, as one resident mentioned in a council meeting, boar are "taking over".

Impurity, therefore, suggests a proliferate and unruly future that threatens multiple agricultural, ecological and social security concerns.



Critically, however, boar impurity appears a matter of conjecture. At a public meeting I attend, Karl (Forestry officer) tells his audience recent genetic analysis from the cull shows them to be “pretty much pure boar”, crucially adding “there is no such thing as a 100% pure wild boar”. Furthermore, he emphasises there is “no definite second peak” in breeding cycles, suggesting females tend to farrow once a year, despite contrary beliefs. Finally, he also explains FC data on culled females shows they have an average of around 6.7 piglets per litter, a number higher than many European countries but comparable to boar found in Hungary and Germany (Nahlik and Sandor, 2003; Frauendorf et al, 2016). Surprisingly, therefore, this appears inconsistent with other FC comments on the matter. Indeed, another government agency representative, Stephen, says “hybrid, feral and true boar...are more or less the same beast”.

The lack of clarity is also mused upon by several residents, such as Adrian, who wonders whether “our boar are as much wild boar as European boar...perhaps, all boar everywhere are partially hybridised” (David, government agency representative). This uncertainty reflects the literature in Chapter 2 that explored how the complex, multi-directional genetic intermingling between boar and domestic pigs makes differentiation scientifically challenging (Evin et al. 2013; Evin et al. 2017). Essentially, as Linnaean classification infers, they are the same animal: *Sus scrofa*.

The persistence of public debates around purity and hybridity befuddles some interviewees, particularly those with an interest in ecology and rewilding. For Darren (ecologist), whilst acknowledging the importance of concerns over biosecurity, if (re)introduced animals “behave as any wild boar would be expected

to in the current ecosystem...it is difficult to say they aren't wild...or they shouldn't be here". This view reflects wider, ontological debates over nonhuman belonging that suggest autonomous behaviour and function ought to be of primary importance, rather than genetics or nativeness (Lorimer and Driessen 2014; Prior and Ward 2016; Svenning et al. 2016). And, yet, uncertainty is a powerful attribute, as shown by David (government agency representative). Though believing boar have a valuable ecological and moral presence in the UK, he struggles to abandon their problematic origin, commenting "even if they behave the same, which nobody really knows, from a purist conservationist perspective...it would be good to know they were genuine...just to be sure". (Im)purity and its potential, it seems, has important aesthetic and semiotic connotations that can be unsettling and pervasive.

### **8.3.3 Vulnerability**

These discursive debates about ferality and belonging feed into all aspects of Dean boar politics. The comments sections in local newspapers and social media groups play out similar discursive arguments informed by differing ontologies of boar. For some of the broader public, the focus on the political classification of boar and other associated boundary markers- wildness, nativeness, invasiveness- is tiring and, ultimately, futile. Summarising the views of many residents, Lorraine wishes that local politics would move on; "they might be mixed...or not...anyway, it is too late now".

However, ferality does matter, not merely as a discursive debate, but through material interactions. Specifically, as discovered in Chapter 7, it is a political technique that eases legislation around biosecurity control. Mark (Forestry Officer) tells me ferality means boar are not technically 'game' and, thus, are not covered by legislation on closed hunting seasons, nor poaching. Though boar are covered by

broad legislation in the form of The Wild Mammals (Protection) Act 1996<sup>85</sup> and the Animal Welfare Act 2006<sup>86</sup>, their feral classification makes their presence ambiguous. In the words of John (Forestry officer), being feral creates “a deliberately grey area...it keeps things open to allow people to deal with them as they see fit”. This is important for people I spoke to with an agricultural interest, such as William (farmer), who says “if the government won’t get rid of them, then landowners need to be able to protect their land as they wish”. Ferality, therefore, is a mode of ordering that simplifies and creates flexibility, allowing landowners to make boar objects of control. This is done by blurring belonging and value. David (government agency representative) summing up other voices, suggests it “ultimately implies boar are worth less than wild and domestic animals...so they can be managed accordingly”. Similarly, Darren (ecologist) explains ferality “is deliberately confusing” in other ways as it “quietly stirs in questions about whether boar are native, non-native or invasive species”.

This ‘confusion’ and ambiguity can partially be attributed to the Action Plan, which framed ‘native biodiversity’ and boar as separate entities, as well as The Infrastructure Act 2015 which classified them as an ‘animal[s] no longer normally present’<sup>87</sup>. Importantly, this legislation also introduced ‘species control orders’, allowing authorities to “eradicate” or “control” the latter on private land, with or without landowner behest. This change meant boar (and beavers) were made distinct from species legally recognised as native and non-native and could be forcefully controlled by authorities. Therefore, not only have boar problematised binary classifications of species as domestic and wild, inducing their categorisation

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<sup>85</sup> <https://www.legislation.gov.uk/ukpga/1996/3/contents>

<sup>86</sup> <https://www.legislation.gov.uk/ukpga/2006/45/contents>

<sup>87</sup> <https://www.legislation.gov.uk/ukpga/2015/7/part/4>

as feral, they have also revealed the fluid, political nature of nativeness and non-nativeness (Head and Muir 2004; Warren 2007). Whereas the commonly accepted “temporal threshold” (Head 2016: 43) defining ‘native’ species in the British Isles is the retreat of the last ice-age (10,000 years ago)<sup>88</sup>, unsanctioned animals thus appear anomalous, reflecting how categories and classifications and socially and politically constructed.

## **8.4 Contesting knowledge practices**

*Participant A: The population hasn't gone up as much as people think.*

*Participant B: What? Of course it has! They are not culling enough! That's the issue.*

*Participant A: They are culling them, just in the wrong places. They aren't tackling the 'problem' boar.*

*Participant B: They need to deal with them.*

*Participant A: What do you mean, 'deal with them'?*

*Participant B: You know what I mean! Kill the feral buggers! That word seems to create horror! Euthanise if it makes you happier! There are too many. They are back with a vengeance, rampaging through the towns!*

*Participant A: Come on! That's ridiculous...*

*(Fieldnote, 17/01/2017)*

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<sup>88</sup> <http://www.nonnativespecies.org/index.cfm?sectionid=15>

This exchange highlights how boar politics are intimately tied to the ways in which they are ordered and regulated. The FC monitoring and culling practices described in Chapter 7, especially, play a critical role in social disputes in the Dean. This subsection, firstly, considers how the calculative politics integral to official translations of boar are used to explain a growing sense of risk and insecurity, before considering how this has been questioned. Following, it then addresses the ways in which culling has become a key site of contest between different actors who not only query it morally but challenge its effectiveness.

#### **8.4.1 'A numbers game'**

In a council meeting I observe, an FC representative outwardly explains the growing tensions surrounding boar presence as “a numbers game”, mirroring what I am told in interviews. Accordingly, the representative adds “their high density and growing population has resulted in boar migrating from the inner forest” and expanding their range beyond forest boundaries, into and beyond villages. This epistemological belief in numerical logics, reducing the complexity of Dean boar and social tensions to statistics, has gathered traction through the increases highlighted in the annual census. At a different council meeting I attend, audience members frequently voice their beliefs in such logic:

*The boar are totally out of control...they are invading everywhere.*

*(Resident)*

*If they [the FC] don't manage their numbers, we will be totally overrun by boar. (Resident)*

*They seemed to be managing it, but now they've totally lost the plot.*

*(Resident)*

*(Fieldnote, 16/02/2017)*

During an interview, Mark (Forestry officer) explains the annual FC census was originally formalised to not only show the public the FC were carrying out a “controlled and scientific cull”, but also to show to the public whether they are

“effectively managing boar”. The annual reports, however, also have a performative role in understandings of boar presence. For many actors, such as the residents quoted above, census statistics are frequently assimilated with personal experiences to help make Dean realities. A sense that the visibility of boar disturbance is increasing and spreading correlates with the statistical growth of the population.

As well as people with anthropocentric concerns, many ecologically engaged actors are also worried about boar numbers. For example, Alison (Forestry officer) tells me she has noticed more “digging throughout the forest”, and that “you bump into them more often when out and about doing surveys”. She believes “getting the population and density down” is important to prevent the heavy and regular foraging in grassland habitats deemed important for key local species of butterfly and wildflowers. Likewise, Phillip (ecologist) voices concerns about the intensity and repetitive nature of foraging in places where boar have previously found food. Generally, the many interviewees share David’s (government agency representative) view that bringing boar “under control” would secure “another, important element of life in the forest”. Without control, however, high densities make many ecologists and conservationists wary about the affect boar have on other, more vulnerable species, as discussed in Chapter 6. One of the issues with boar presence, therefore, is the tension between allowing wildness, the ‘degrees of autonomy’ and levels of control (Deary and Warren 2018; DeSilvey and Bartolini 2018; Vannini and Vannini 2019), as summarised by Stephen (government agency representative):

*they might have a role, but...at a high density, they cannot be a valued part of the ecosystem if they are controlling the ecosystem rather than contributing to it. It is not healthy to have so many.*

Additionally, perceptions of high numbers and density worry agricultural actors concerned about disease topologies and epidemiology beyond the Dean. If boar

start moving about and get to places with big pig farms, Joseph (agricultural stakeholder representative) tells me, it will cause havoc. William, a farmer on the edge of the Dean, describes the situation as “like watching a population of rabbits multiply and multiply and multiply”. Similarly, Stuart, a professional stalker who shoots boar on properties in the wider Dean, explains he is seeing “more and more of them” coming from the forest and disappearing into farmland. Such concerns over these expanding populations are shared by government officials who worry increasing numbers and a widening range might have multiple biosecurity implications and lead to calls for more intervention.

Increasing boar numbers, it seems, bring different spatial-temporal concerns and produce recombinant, hybrid knowledges. For some residents around the forest, the FC census data affirms their sense of population growth based upon disturbance and boar sightings. This applies similarly to most agricultural stakeholders who see more boar on their land. A flourishing population, therefore, is perceived as driving boar expansion through settlements and into the wider landscape, broadening feral futures and their multiple insecurities.

#### **8.4.2 Disputing numbers**

Despite the compelling argument of the census, its calculative politics and ‘numbers game’, there is a counter discourse circulating the Dean. For many people who spend time in the forest, the FC calculations don’t necessarily reflect their own, situated knowledges. Reflecting the views of some other residents I interview, Ian (resident) tells me “you certainly don't see so many now” and Mike (resident) feels like he hasn’t seen boar “for months”. These observations are based on their quotidian experiences, as Rob (resident) is keen to reiterate:

*I and others walk through the forest every day, we go everywhere ...and bump into lots of other people on our travels... people who go deep in the forest all say the same...there are definitely less about.*

This view is shared by Neil (resident), who describes his tracking as taking him “deep in the forest where barely a human walks”. He believes his attentiveness to boar traces and reducing encounters over recent years “intuitively” tells him there is “not a lot of boar nowadays...certainly less than four years ago”. Whereas some residents and agricultural actors interpret boar population through boar presence beyond the forest, many regular forest users frame their knowledge around experiences within the forest. However, the suggestions there are less boar in the forest jars with the ‘circulating references’ of the FC that show an increasing population. Whilst many residents accept the formalised procedures of the FC and their technoscientific methods, some, such as the residents above, express scepticism about census sampling methods and technologies. Like other wildlife ‘controversies’, therefore, doubts persist about science and ‘expertise’ (Wynne 1996; Whatmore 2009; Sandover et al. 2018). In the Dean, some members of the public raise questions about the accuracy of thermal imaging and modelling translations:

*How can you be absolutely certain that it is boar that you're counting?  
(Ian, resident)*

*Boar move pretty fast sometimes. Does that mean you get the same lot  
numerous times? They don't just stay in one place! How can you be sure?  
(Rob, resident)*

*I've done the research...distance sampling shouldn't be used on animals  
that are not uniformly present, like boar...nor be carried out along linear  
paths where animals might gather or forage. (James, resident)*

For these and other uncertain residents, it seems the complex virtual projections and numerical extrapolations of modelling contradict their own experiences in the forest. Rather than universally asserting their own boar knowledge and confidence that ‘control’ can be attained by knowing the population, FC modelling, conversely, appears to generate doubts. Distrust, in part, flows from the inaccessibility and

opaqueness of the census methodology, even though ecologists suggest this method is one of the most effective at establishing boar density and abundance (see Keuling et al. 2018). James (resident), a publicly dissenting voice, suggests the census ought to be “truthed through a proper population survey...with multiple techniques”, but believes the FC are reluctant to as it would “prove they are not the experts they say they are”. Most interviewees, however, have a more pragmatic view on the difficulties of accurately surveying elusive wildlife, as reflected by Tim’s (resident) comments: “I imagine it is an impossible thing to do and to know...you can question the FC on many things, but I sympathise with the difficulty of knowing how many boar are out there”.

Despite these lingering criticisms and the suggestion they represent themselves as ‘experts’, the FC do appear to self-reflective in relation to the census, as shown by Mark’s (Forestry officer) admission that they have been “learning on the job”. Indeed, they frequently reiterate the limitations of the census, as John (Forestry officer) explains:

*We’ve never claimed it did anything more than indicate a direction of population travel...I think that’s acceptable for all scientists in a woodland context. Any surveys are only going to be an estimate...with deer or boar.*

If this is the case, it appears a problem for some people is that these ‘estimations’ are often misrepresented as fact, whether the fault of the FC, the media, or everyday communications. Losing the nuance and uncertainty of the census, such as the high standard deviations, once again, feeds into FC distrust, as shown by Neil (resident):

*Sometimes in the press or when you speak to them, it comes across as though they know exactly what the population is, but the confidence levels of their modelling might be 1000 or so boar...if people complain there are 200 more boar, and this is how much the model deviates, how can you say it is going up or down?*

Interestingly, rather than dismiss FC calculations, people who are either outwardly sceptical or just uncertain often appear to assimilate and adapt these to their own situated knowledges, as shown in other studies with other species (see Bear 2006; Wagner 2007; Fischer et al. 2014). Official translations, therefore, still become markers to help make sense of the world. For example, at a time when the FC estimate the population at 1562, Mike (resident) suggests there are probably less than 1000; Ian (resident) says he “would struggle to say more than 500 at the minute”; and Neil (resident) suggests that there might be around 1000.

Importantly, it is not just people who think the boar population is over-estimated who reinterpret FC estimates, but also those who think it is under-estimated. For example, William (farmer) believes the boar population “is way above and beyond” what the FC claim, whilst Shaun (wildlife management) says “it is probably double what the FC are saying...at least 3000”. Far from establishing authority, it seems the census becomes a key site of contestation over the way in which boar are represented by authorities, and the way in which technoscientific knowledges relate to situated, experiential ones.

### **8.4.3 Ineffective culls**

The early hopes of the FODDC Task Group that FC management would “encourage boar to remain in the wooded areas of the forest” have clearly not been realised. As boar geographies have expanded, so too have the insecurities and tensions.

Affective and emotional responses are related not only related to their presence, but also the ways in which they are managed i.e. through culling, as exemplified in the conversation, from a public meeting, below:

*Resident A: ...I just don't think it is the right approach. People can't just kill everything they don't like!*

*Resident B: But you don't live with the boar. You're in Lydney, you're not actually in the forest. It is fine to say that when you live there. You don't have to deal with them. They aren't just cuddly.*

*Resident A: I have done my research and I know darn well! You won't achieve anything by killing them all.*

*Resident B: I didn't say kill them all...*

*Resident A: Sounded like it to me!*

*(Fieldnote, 16/02/2017)*

This conversation, reiterating a point from subsection 8.2.3, shows how identities can form around binary labels 'pro/anti-boar' and 'pro/anti-cull', but, that they are often more complex than simple categories can portray. This can lead to misguided presumptions about other actors in the Dean. For example, many people I interview who could be classified as 'anti-boar' suggest they would have less of a problem if boar remained 'deep' in the forest, "as they were at the beginning" (Diane, resident). Conversely, most residents who are happy living in proximity to boar also recognise, in the words of Mike (resident), "there is a need for some kind of management". Summarising a view that is shared across a spectrum of participants, Tim explains that "keeping them out of our domestic living space...is the big issue", while Neil (resident) comments:

*There has got to be a cull or something, for the good of everyone. I don't like it, but it means the boar that remain will be more welcome in the forest, and it would cause less stress in the towns for the people who have an issue. (Neil, resident).*

Culling as a 'mode of killing', therefore, might be reluctantly supported as, in Crowley et al's (2018) words, a type of 'sacrificial care' that not only benefits humans and other animals, but even boar themselves.



Criticism of culling is multiple and might come from residents with certain animal rights ethics and ontologies of nature, as discussed in the subsequent subsection (8.4.4). However, the FC are also heavily chastised for the ineffectiveness of their

management practices, in other words, either for not killing enough, nor killing in a strategic manner. With regards to the former, the FC appear to concur with such public commentary. Speaking at a council meeting, one representative admits “it's true that the boar population is not under control”, whilst John tells me that people are critical of them “for not doing enough” and shooting less than their population target requires. An onto-epistemological belief that insecurity is related to boar numbers, therefore, means ineffective culling is publicly problematic for the FC who are perceived as not fulfilling their responsibilities.

There are, however, mitigating factors, ones relating to the more-than-human hinterland described in Chapter 7. Firstly, for the FC, the issue is inherent to the open access of the Dean. Shooting in public space is problematic and the necessity for safe shots and ‘good kill[s]’ (Higgin et al. 2011), in Mark’s (Forestry officer) words, “limits opportunities...to carry out wildlife control duties”. This means the four-six wildlife rangers they use is “pretty much capacity” and there would be a “problem deploying more”. Though some residents and councillors suggest the FC should put more resources into management, Mark argues “the forest is saturated, and you can’t just put more guns in”<sup>89</sup>. The multiple rhythms and mobilities that make up the forest place mean public activity is constant, from early morning until dusk, and finding secluded culling spaces is difficult.

Relatedly, working in public space means the rangers are visible and regularly face “hostility”, disruption, and have “to work around those who aim to sabotage [our]

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<sup>89</sup> Throughout my research, the number of “guns” varied. The FC had been given the budget to employ two apprentices to make the number of wildlife rangers six, though later in the fieldwork this had reduced to four as two had left.

work". Notably, members of a local 'Sab the Cull' group have followed rangers to their houses, abused them on social media and vandalised FC vehicles. Though the numbers of people who make work difficult is small, John (Forestry officer) says "the unpleasant minority punch greatly above their weight...being abusive and aggressive...it is pretty unpleasant to deal with...but I guess it is part of it". Towards the end of my fieldwork, in autumn 2017, there were accounts in the press of "forest pixies" destroying temporary wooden high seats and smearing human faeces over permanent metal towers used for shooting<sup>90</sup>. Comments on social media groups often refer to FC rangers as "murderers", "killers" and "evil scumbags". Such an atmosphere, therefore, makes the FC deploy discrete methods. Significantly, this means other commonly suggested alternatives to public culling, such as trapping and corralling, cannot be implemented as equipment gets vandalised. Likewise, a trial on woodland near the Forest of Dean to dispense contraceptive bait was aborted due to wrecked pellet dispensers.

Whilst some people sympathise with these 'sab' activities, they appear to alienate many of the 'middle-of-the-road' majority. Ian (resident) tells me:

*I support the boar too... but that group who actively encourage damage to forestry vehicles, follow them home and do things like that, that's not on. I mean, you've got to find a happy medium where everybody is all right and respected...including the FC...and the animals.*

Indeed, the results of interfering in the cull can be somewhat contrary to the 'sabs' intentions. Firstly, as Rob (resident) explains, "it means the only option is to shoot boar...so the sabs just mean that more boar get killed as other humane methods,

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<sup>90</sup> <https://www.gloucestershirelive.co.uk/news/gloucester-news/pixies-putting-poo-locks-vandalising-602941>

like sterilisation, are impossible”. Furthermore, and leading on to the following subsection, it precludes a more ecological approach, because, in the words of Neil (resident), “the FC just shoot anything they can...rather than think about where the problems are”.

#### **8.4.4 Disputed culls**

Despite the persuasive numbers logic rationalising insecurity, alternative accounts abound relating to the necessity, effectiveness and practicalities of culling. Boar management and, more broadly, human intervention in nonhuman lives, are diversely understood by people with different ontologies and ethics.

Firstly, one group of interviewees who question the cull feel FC interventions are ecologically necessary and might even perpetuate insecurities:

*Homo-sapiens are interfering too much...other things might find a natural level if we just let them...there is a natural plateau for every species. (Tim, resident)*

*the boar are rebounding, made more fecund... because it is too savage a cull, so you are getting more breeding than a natural system. You should allow the boar to equilibrate within the forest, according to disease, food and shelter... the need for predators...it is a myth...they just need to kill the ones that come out, but not many will. (James, resident)*

This ‘equilibrium’ ecological logic is held by several people I speak to who have a strong animal rights ethic, including those sympathetic to the intentions, if not the methods, of the ‘sabs’. For example, Patricia (resident) believes, “the boar will get to a healthy point and then their resources will limit their population...we don’t need to kill them...it is a human desire to control”. For these and other likeminded residents, lethal intervention is not only morally questionable, but also ecologically uncertain.

Most participants, however, hold a different understanding of intervention in boar presence. For example, Neil (resident) is dismissive of such equilibrium beliefs:

*I wish it was true and we didn't need to cull, but we can't, as some 'wildlife experts' say, let them stop breeding when they realise there is no more room! That argument...is the most ridiculous thing I have ever heard!... it is their instinct to breed and succeed if the environment allows...they will just keep expanding, though won't hit a plateau and stay in the forest.*

Other interviewees, exemplified by Adrian (resident) who describes himself as “moderate pro-boar”, are keen to counter the “misbelief” that they are “inherently anti-cull”. Rather, how, without predators, it is important that boar are controlled, something which makes him “uncomfortable”, but reflects how his care for both animal rights and wider ecological matters intermingle. The key words, Adrian emphasises, are “an appropriate cull”, and this is where he has issue with the FC. Indeed, a diverse array of people are connected by the sense that, currently, culling appears ‘inappropriate’.

As Chapter 6 highlighted, a critical issue surrounding Dean boar is their presence in and around the edges of inhabited areas. This relates to debates around the ‘inappropriateness’ not of the cull itself, but where the cull is performed. More specifically, rather than attributing increased boar movements in and through villages entirely to the numbers logic, many interviewees feel this relates to a more complex, ecological entanglement.

*If there are 20 boar in Nagshead, they aren't doing any harm to anybody and they're not having any adverse effects in towns. So why push them on? You can't put signs up to stop them going in the villages, but...the way and where they're being shot... is doing damage because it's driving them out of the forest and breaking up their family groups...it has an effect on the sounders and it seems to cause even more damage (Ian, resident)*

*They [boar] are smart...I don't really know the FC's method, I imagine they just shoot what and where they can....but boar learn, they avoid places that become risky...no doubt they find 'safe' areas. (Anthony, stalker)*

The argument, therefore, is that FC management practices are altering the behaviour of boar by creating a perturbation effect. This argument sometimes couples with a belief FC forestry operations, namely, a shift to 'continuous cover' felling rather than 'clear felling', is creating a "continuous disturbance" (Alan, councillor) in central forest areas. The effect is that boar seeking spaces offering respite from shooting and habitat disturbance, are moving into forest edges, settlements and land beyond the Dean, making encounters more likely and village foraging more frequent. This argument chimes with research in Europe, that highlights how boar adapt and respond to hunting by changing their movements and behaviour (Keuling et al. 2008b; Thurfjell et al. 2013b; Stillfried et al. 2017a).

The FC, themselves, appear somewhat uncertain about this suggestion, offering slightly contradictory comments in different contexts:

*'Anecdotally' the FC officer says, he knows boar numbers on surrounding farmland are going up, that "they invaded South Wales...some time ago", and that the decreased forest population could be "because they have found safer areas where they are not being shot". He accepts the FC "do not really understand" boar movements and funding is needed to improve this... The decreased population, he has clarified, might only be on FC land but it is likely boar are residing on non-FC land, but this is not their responsibility. (Fieldnote, 28/10/2017)*

*I don't subscribe to this argument...we didn't start culling this year until Sept 1st, and they were already in Ruspidge and the outskirts of Cinderford in August...there might have been other works going on which caused a little bit of disturbance, these animals are quick to learn...but it is just pushing an 'anti-cull' agenda...But...the population has grown*

*substantially, and so we're experiencing these social issues much more frequently and widely....than ever before. (John, Forestry officer)*

By dismissing this as another example of the 'anti-cull' agenda, however, John's response appears to dismiss both the affective complexity of culling, as well as public queries. Questioning the cull, however, does not necessarily equate to being morally against it, *per se*, but sometimes a more relational considerations of boar ecologies, human interaction and intervention, something highlighted in other research (see Boonman-Berson et al. 2018). The issue, therefore, for many people, is the apparent readiness of the FC to control boar with what, externally, appears a simplistic, numerical logic disregarding their difference. In other words, it is a biopolitical strategy indifferent to the lives of different boar.

Such concerns also relate to the official 'ferality' of boar and the decision of the FODDC Task Group to agree that culling can be performed year-round, unlike 'game' species which have a closed season. Even people unsettled by boar presence often profess their fondness for 'humbugs', so knowing the FC "may be shooting sows with litters of little piglets and stuff like that...that's not nice", Lorraine (resident) tells me. The talk is often of enacting a close season:

*It's true, they 'can' have piglets at any time of year...but from January to May is when most of the farrowing is, and you get a period of three or more months after that when they are lactating. So, those months, in my opinion, should be a close season...in the past the FC voluntarily stopped at the end of March, but...because of this obsession with getting numbers down...their shooting is increasingly intense to be honest. (Mike, resident)*

*People think that stalkers don't care about animal welfare, but of course we do. If boar come on my land, I observe their group and take care over which I shoot. Sometimes, if it is a mother with young, I don't shoot them. You might say that is silly if you want to control the population, but that is my 'stalking code'. (Shaun, wildlife management)*

The voluntary closed season referred to by Mike was in 2011/12 when, in John's (Forestry officer) words, the FC "engaged with the public regarding decision-making", partly to show the FC are not "the bloodthirsty assassins" that some publics frame them as. The problem was, from the FC's perspective, this "resulted in the population going up faster". As the FC reinstated year-round culling, this once more provoked issues of distrust and community exclusion.

Despite criticisms, however, most participants acknowledge that the political situation makes it difficult for the FC to change the geographies of their culling practices. Rangers shooting on the edge of the towns, Rob (resident) opines, "would cause an uproar, you know, as happened when they shot that male in Coleford"<sup>91</sup>, and, in the words of Graham (resident), put the FC "even more in the public eye". A big problem, therefore, is that even if people agree with culling, they don't want to see it...they don't want the shooting near where they live" (Robin, resident). Indeed, a local news story focused on the risks and dissatisfaction of FC "[m]arksmen shooting wild boar too close to homes"<sup>92</sup>. As many Dean residents feel a close affinity to the forest and regularly move around its interspersed space, culling becomes affective and emotional:

*knowing they were shooting near where I take the dog out the back [of my house] would make me nervous about where to go. (Karen, resident).*

*It is disheartening to know that forest wildlife is being killed on your doorstep. (Nikki, resident)*

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<sup>91</sup> Rob references a story when the FC were asked by the police to kill a male boar that had been spending time in Coleford.

<sup>92</sup>

<http://www.theforester.co.uk/article.cfm?id=102789&headline=Marksmen%20shooting%20wild%20boar%20too%20close%20to%20homes%20in%20Parkend%20say%20residents&sectionIs=news&searchyear=2017>

*Those shooting stations and the rangers can make the forest seem like some kind of killing fields...Just senseless killing in a forest that should be peaceful. (Patricia, resident)*

This subsection has highlighted one of the biggest tensions in the Dean. That is, the friction between actors who believe the boar population is escalating ‘out of control’ and needs more intense control, and those who believe boar are bound in more entangled ecologies and necessitate more considered approaches to intervention. However, the subsection also, once more, highlights how the visible and public politics in the Dean problematise DEFRA’s governance strategy emphasising ‘regionalised management’ and ‘community and individual landowner responsibility’. The divergent understandings of boar and how to live with their presence in the Dean reveal the diversity of the Dean, and how abstract terms such as ‘public’ and ‘community’ (Murdoch 2003; Staeheli and Mitchell 2007; Eden 2016) can underestimate underlying discord that run through social collectives. Rather than homogenous and coherent, the Dean appears to be a complex entanglement of different ontologies and ethics which have gathered around the affective presence of boar.

## **8.5 Contesting responsibilities**

This final subsection, once more, considers the idea of ‘community and individual landowner responsibility’, this time in relation to the Action Plan’s reiteration that “[G]overnment will help facilitate this regional management through the provision of advice and guidance” (DEFRA 2008, p. 1). This “high quality advice”, it outlined, would be provided by a range of government affiliated “delivery partners” with whom DEFRA had “secured...agreement[s]” (ibid, pp. 3-5). However, as this subsection shows, a seeming lack of guidance and advice has led to tensions over responsibility, (dis)trust, and questions about authority in the Dean, as exemplified by the following fieldnote taken during a public meeting:

*The meeting has started to unravel slightly, the chair is being ignored by members of the public. He keeps on acknowledging the importance of their voice, but also their turn to speak after councillors. From over my shoulders, someone shouts “there is a crisis of authority”, to agreeing murmurs from all spectrums of the audience. “Nobody will take responsibility...nobody is willing to help the community...all the authorities are running away. (Fieldnote, 16/02/2017)*

### **8.5.1 The FC’s ‘deaf ears’**

As the subsections on monitoring and culling have emphasised, a key issue in the Dean is the FC’s relations with the wider community. As the largest local landowner, the landowner on whose land boar first appeared, and being a government agency with ‘expertise’ in wildlife management, ‘responsibility’ was placed on the FC to manage ‘boar effectively’. Critically, however, the boundaries of their ‘responsibility’ are found at the edges of the public estate they manage. As boar move through the landscape and across ownership borders, however, so ‘responsibility’ is mobilised and shifts. This causes tensions, the likes of which often become apparent in council meetings:

*The FC representative is asked about the census. He wants to “emphasise again” that it is only carried out on public forest estate, as is the culling, and that he only has ‘jurisdiction to operate and spend public money’ on public estate. A councillor asks about how the community should deal with boar “descending on towns”. The FC officer suggests it needs a stakeholder partnership, which the FC can be a part of, but not lead. A few councillors look miffed and put out. I think they would like the FC to take responsibility, even though they are not obliged to. (Fieldnote, 28/10/2017)*

In several other meetings, as in the one above, I hear councillors ask if the FC will apologise and own the complicated situation around boar, something it is not

prepared to do. While the FC suggest they can help communities more broadly, they do not have the resources nor jurisdiction to intervene in boar presence throughout the wider landscape, as explained by Mark (Forestry officer) below:

*People want us to get rid of boar in villages, but we can't do this. It is a police matter. On private land, people can employ qualified marksmen. We can't go in with guns. We did it once in exceptional circumstances, but this is not our policy... There would be public opposition, quite rightly. Perhaps there are possibilities for tranquilisation, but we don't have the qualifications. There would need to be vets.*

Many people sympathise and feel similar sentiments to Phillip (resident), who tells me the FC are “stuck between a rock and a hard place”. Likewise, Lorraine (resident) says their situation “is thankless” and Andrew (resident) feels it is “easy to make them enemy number one”. However, though some of the expectations for intervention contradict the responsibilities outlined through policy, there is a consensus among many interviewees that the FC’s attitude can be, at times, unhelpful. One example of this is the several boar interest groups that have emerged over the last decade and, though the FC have, at times, worked with them, have often dissolved through apathy and exclusion. In the words of James (resident):

*All the wildlife groups have just given up with them. We can't be bothered to talk to them anymore. We're just wasting our time...they are intimidating...they pretend to listen...but they label wildlife lovers troublemakers.*

Relatedly, many participants highlight the difficult relationship the FC have with communities around the Dean more broadly and suggest the organisation have shut down space for dialogue and community involvement in boar matters. For example, some naturalists feel they could contribute their knowledge to help monitoring and a more selective management approach, “but the FC have rejected

it” (Neil, resident). It is, Rob (resident) surmises, “‘my way or the highway’ with the FC”. There is a feeling, therefore, that people who query the FC become tainted as problematic and interfering. As other studies have suggested, it seems active publics and individuals emerging around environmental issues can be divided by governing agencies as good and bad, helpful and unhelpful (Eden and Bear 2012). However, it is not just residents tagged as ‘pro-boar’ who can feel excluded, but also some local actors who might be expected to work with the FC on a wider, governance strategy. Importantly, these tensions are not just related to boar, but political matters more broadly. Alan (councillor) tells me negotiating and communicating with the FC is sometimes like “speaking to deaf ears”, whilst Gary (councillor) suggests “they can act like a mafia sometimes...they seem unaccountable”.

Ultimately, the close integration many residents have with the forest results in frustration at FC practices and a perceived lack of engagement. Resisting the FC, as a government agency, as well as ridiculing other authorities such as the FODDC, appears to be part of forest identity. Political tensions are not necessarily new, but tied to long-standing ones pre-dating boar and tied to Dean history and power asymmetries, as shown in the comments below:

*People generally have never liked the FC’s attitude of ruling the roost in the forest. (Neville, farmer).*

*Community should have more say...the forest is public, it belongs to us as much as them (Tim, resident).*

*Residents in have historically kicked against people telling us what to do...that is what we have always done. (Andrew, resident)*



As this thesis has shown, the Dean ‘community’ and ‘public’ is not a singular entity, but are made of actors with multiple ontologies, ethics and histories. This heterogeneity, whilst certainly not unusual, makes the position of governing

authorities very difficult. According to Steve, speaking from the FC's perspective, "the impossible job is trying to find balance...between different people, the good of the forest...and the commercial operations". This, most FC officers admit, is a huge challenge. Similarly, they also acknowledge that local relations could be better. This, Mark (Forestry officer) explains, is something they are trying to improve, but also is related to the legacy of the FC as more authoritative, government agency:

*In the past the FC never needed to be accountable...they could just do what they wanted...so partnership approaches have required institutional change...which hasn't always gone smoothly.*

Implementing multi-actor strategies of governance where a core institution, the FC, has historically functioned with a different ethos has complicated the boar situation. For the FC, this has necessitated a shift "from a culture...that focused on getting the job done...to communicating with people about what they are up to and so on" (Stephen, government agency representative). Though some interviewees feel this is still ineffective, others say the FC have been improving. For example, some parish councillors tell me of their recent, positive experiences. Whereas the FC used to be "extremely unhelpful", Martin says their recent involvement and help in trying to drive an alternative boar management group "couldn't have been more encouraging...they really want to help us get something done". Likewise, Ivan says; "I have always found the FC and their updates really useful...it is a difficult problem we face...[but] usually they are becoming more communicative and informative about what is going on with the boar". Indeed, the regular Scrutiny Committee Updates and Forest Forum events suggest that the FC do engage with other stakeholders. However, this appears to be on their terms and through more formalised, procedural paths that might not be visible nor appear personable enough for many engaged publics and, furthermore, are seen to perpetuate power hierarchies in the Dean.

### **8.5.2 'Abandoned by DEFRA'**

*Someone suggests trying to contact DEFRA to make them aware of the situation in the Dean. There was some positive reaction, but most people felt there was no point. DEFRA and the government have “no interest in what is going on”. “We are irrelevant”, someone says. (Fieldnote, 18/01/2017)*

While the FC are personally embroiled in the Dean, leading to deep-rooted distrust and tension between them and some publics, the above comment highlights that some people believe DEFRA and the government should take more responsibility. The sense that DEFRA is disinterested in boar in the Dean is complicated doesn't quite ring true as, strictly speaking, they intervene through the FC. However, their lack of direct involvement with authorities beyond subsidiary bodies reflects their underlying principle for wildlife management which, as outlined in subsection 8.2, is one of 'no intervention' unless there is 'sound reason and evidence for doing so'. However, the feeling persists, even amongst government agency representatives such as David, that central Government have not been helpful:

*Though the FC haven't always helped themselves, DEFRA has abandoned them in the Dean...everybody looks to the FC to solve everything, even in places where the boar are not their problem, or the FC don't have the skills or resources...it's because DEFRA left the national strategy so open.*

David's view is reflected by many people who feel the FC, and the Dean, have been 'abandoned'. Furthermore, there is also a sense that the Action Plan and the responsibilities of DEFRA and its associated agencies is no longer fit for purpose. Simon, another representative for one of DEFRA's official 'delivery partners' that were originally earmarked to 'provide high quality advice', explains how Natural England were expected to carry out monitoring, but, have not actively become involved. Rather, "they have just kept tabs on the situation". This is partly because they are "reluctant to become embroiled in the situation", but also because "the resources aren't really there anymore". Austerity economics and Brexit has meant,

Simon explains, “DEFRA civil servants don’t have time to spend on things like boar in the Dean”. Such changes in funding and focus has also affected the Deer Initiative who, after being supported early on to produce a range of educational documents, have struggled for funding. Indeed, they were initially funded to facilitate a wider, ‘Boar Management Group’ that engaged with landowners beyond the Dean, but government funding distributed via the FC ran out, leaving the group dormant. Furthermore, another government agency, LACORS, were completely disbanded in 2010. This political changes suggest DEFRA’s ‘delivery partners’, beyond the FC, have not been in a position to aid an effective community or regional strategy.

The growing presence of boar beyond the Dean has also raised concerns regarding diffused governance. Focusing on the wider securities of agricultural landscapes, Alexandra (agricultural stakeholder representative) suggests placing responsibility entirely on landowners or “divided communities” to control boar has allowed DEFRA to “devolve responsibility”. The repercussions, she argues, are that there is no shared knowledge about boar in the landscape, about numbers culled, about where they are or how far they are moving. Vitally, this becomes a problem in relation to notifiable diseases, as “it is critical to know where they are if a disease event occurs”. Similarly, Joseph (agricultural stakeholder representative) voices concerns about the fluid but unrecorded movements of boar through a landscape of diverse landowners and interests:

*Different landowners want to control them and do as they please...others want to make money from shooting them...[and] there are those that would like more co-ordination. Rural landowners have different perspectives, which makes a coherent strategy hard...but it does seem like a good idea for there to be something more centralised.*

### **8.5.3 Council ‘heads in the sand’**

Much like the sense of ‘abandonment’ by DEFRA, a collective Dean identity has formed around the belief that local authorities- notably, the District and County

Councils and the local MP- view the region as a peripheral borderland. Irrespective of one's feelings about boar, residents bond over this outsider status and a feeling that local authorities, according to Neville (farmer), "stick their heads in the sand when it comes to the Dean". This has meant that councils, as much as government agencies, are perceived as avoiding 'responsibility' regarding boar, as highlighted in the fieldnote below:

*The mood appeared friendly, buoyed by jokes made at the expense of different authorities, Dean identity and being political outsiders.*

*Participant A: We are the poor relation in Gloucestershire... things will be interesting when boar enter the posher parts of the county!*

*Participant B: When they start getting telephone calls from retired Lieutenant Generals in the Cotswolds, the District Council will be pressed into action!*

*Participant C: We should get the boar on a bus to Gloucester, give them a free bus pass!*

*(Fieldnote, 18/01/2017)*

A critical issue laced throughout this chapter, and thesis more broadly, is the complexity of boar movements and inhabitation of village space. Though the FODDC initiated the original local strategy that placed emphasis on the FC's regulatory role, they never adequately addressed what happens when boar beyond FC land. Though the FC have complicated relations with many members of the surrounding communities, it is established that they have responsibility within the Statutory Forest. In contrast, many people feel there is no authority to turn to if they need advice or guidance about how to deal with boar beyond the forest, in villages or even private property. This is reflected by Lorraine's (resident) comment:

*I understand it is not the FC's problem if they are in the high streets. Fine. But who do I speak to if there is a sounder digging in the playing ground, or outside my house? Who is supposed to help?*

A territorialised policy focusing on landowners and communities, therefore, has left spatialised voids in responsibility. Whilst many residents contact their Parish Councils to register village incidents, as Eddie (councillor) says, they “are not experts” and do not have technical nor economic resources to deal with “problem boar”. While parish councils might have small funds to contribute to better fencing of sports grounds, social clubs and community spaces to exclude boar, they are unable to help individual parishioners who, according to the Action Plan, should protect their own property. Feelings around this individualised responsibility are unsurprisingly, divided. Some people bristle at the FC’s suggestions in the media that residents need to invest in boar-proof fencing<sup>93</sup>, whilst others find this reasonable.

Responsibility is not just a legislative matter, but also a practical one. Upon contacting councils, some residents, such as Malcolm, report being told by both the FODDC and their Parish councils to contact the FC, but, having done so, were subsequently informed “the boar in the villages were not their problem”. This uncertain cycle also includes the police. John (Forestry officer) explains how the FC set “a bad precedent” when they “dealt with a problem boar in Coleford on behalf of the police...even though we specified this was a one-off”. Though he reiterates that being “a public nuisance in villages...are a police matter”, the police, themselves, say this places them in a difficult position. During an interview with Lindsey (government agency representative), she says from the police’s perspective, they are not in a position to “tackle wildlife in towns” because they “aren’t wildlife experts...and can’t dispatch a firearms team from Gloucester for a

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<sup>93</sup> <https://www.dailymail.co.uk/news/article-4145598/Town-besieged-wild-boar-told-fences.html>

boar in Cinderford”. This frustrating loop has multiple affects, as highlighted by Neil (resident) below:

*I knew there was a sounder of boar near the cemetery in Cinderford in the autumn. I warned the FC, the FODDC and parish councils, the police that they were feeding and resting round the back, and they would probably enter the grounds. The wall was bugged. These are the kind of boar that should be managed, but nobody wanted to know, nobody listened. Everyone, effectively, hung up, or pointed the finger at someone else. Look what happened, everybody was up in arms, saying they are out of control! It is ridiculous. It is not the boar that are the problem, it is that no-one will decide how we intervene in these kind of problems.*

This befuddlement at disinterested and unhelpful authorities manifests in other aspects of local politics. At one community boar meeting, residents express their surprise and disbelief that Parish Councils had never once engaged in cross-boundary communication to discuss boar developments and experience. Though the broader, regional concern was explained as the District Council’s remit, wider attitudes towards the FODDC are reflected in Jeremy’s (councillor) comment after the meeting; “the district council will never commit to doing anything...they want an easy life and blame other people when things go wrong”. The FODDC, however, is a diverse gathering of representatives with different views and enthusiasms towards boar, meaning they, themselves, struggle to agree on the notion of responsibility, as shown in the exchange between councillors below:

*The FC representative explains that they held a stakeholder meeting to start discussion about how to address concerns that “travel across multiple agencies, multiple stakeholders and landownerships”. “There needs to be a wider, broader approach”, he says. A councillor asks whether the District Council “should take on more of a leadership role?”, to which he replies he would “welcome any multi-agency approach”. The councillor confirms he will put a motion forward. But this suggestion is met with murmurs of dismay, quiet mutterings and loud exhalations. A*

*few councillors look angry, and another replies, curtly, that he finds this suggestion “bizarre”. It seems, the FODDC don’t want to be involved with such a hot potato. (Fieldnote, 28/10/2017)*



Over a decade in the Dean, have been reconfiguring landscapes and human relations, yet there appears to have been a political inertia. This fatigue is apparent at an FC arranged workshop about boar in summer 2017. Though discussions, to me, appeared furtive, to many other people engaged with the boar situation for a longer time, cynicism abound. During the afternoon coffee break, an ecologist next to me says “the proof will be in the pudding” in response to my optimistic comments. Similarly, someone to whom I give a lift home says it was “interesting” but not “completely different to previous events”. There was the worry, he says, that “it was just another talking shop...without anyone taking responsibility...like other meetings”. The intention of the workshop was to galvanise multi-stakeholder discussions and help facilitate a community approach to governance, however, despite the FC arranging the event and DEFRA delivery partners, such as the Deer Initiative, being present, there was a residual sense that someone- a group or organisation- needed to take the lead, and that nobody was willing, or had the capacity to do so.

## **8.6 Chapter Summary**

This chapter has explored the performative role policy and local political relations have played in Dean bo(a)rderlands, primarily by attending to the ambiguity and uncertainty generated by the DEFRA Action Plan. Firstly, by categorising boar as feral, it established they didn’t truly belong in England. Ferality was rationalised according to normative logics surrounding their unsanctioned movement from domestic space, as well as doubts over their genetic purity. However, as shown in other rewilding cases, contrasting spatial-temporal understandings of wildness, autonomy, purity and nativeness (see Lorimer and Driessen 2013; Deary and

Warren 2018; DeSilvey and Bartolini 2018) have been evoked in fervent contests surrounding boar belonging in the Dean. Furthermore, ferality has also been shown as a political technique to delegitimise presence (Donaldson and Kymlicka 2011), whether for ecological, social or economic reasons. Indeed, the tensions around the implications of ferality, distrust of monitoring and management practices and the contingencies of carrying out a 'public cull' (Sandover et al. 2018) are all embroiled in complex, multi-faceted controversy surrounding boar governance.

The chapter also considered how another form of political ambiguity, the promotion of a 'regionalised' and 'community' centred management strategy, has contributed to a feral local politics. Based on a territorialised notion of responsibility (see Murdoch 2006; Bear 2013) and coupled with a loosely understood notion of community (Welsh and Wynne 2013), policy has facilitated an environment where responsibility and leadership are vague and ill-suited to make sense of the various human-boar tensions arising from their mobility. This has left a disjunct between the rigid demarcation of individual landowner responsibilities, the false premise of a coherent community and public (Macnaghten and Urry 1998; Murdoch 2006), an imbalanced spatial distribution of skills and knowledge, and the fluid space and geographies of boar. These have entangled as a vigorous debate, or controversy, over voice, authority, trust and governance of risky and unruly wildlife (Enticott and Wilkinson 2013; Enticott et al. 2014; Cassidy 2015; Young et al. 2016).

## CONCLUSION

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### 9.1 Introduction

This conclusion considers some of the key findings and themes that have emerged from this feral ethnography in the Forest of Dean. The thesis not only enriches understandings of how human-boar relations are lived and experienced in a specific locality, but also considers the broader implications of ferality and rewilding events on places, biosecurity practices and modes of nonhuman governance. As the thesis has shown, while the Dean is itself a cultural complexity, woven with distinctive territories, mobilities, histories and multispecies relations, it is also in relation to wider political ecologies, circulations of life and more-than-human entanglements.

To draw things together, this conclusion begins by outlining several key empirical and conceptual contributions. First, it revisits the framing concept of borderlands and feral rewilding with reference to the Dean, before then briefly discussing the valuable contribution of my ethnographic methodology. Following this, the chapter considers some of the findings through three conceptual themes that emerged as key to the thesis: feral spatialities, feral temporalities, and feral visibilities. These are traced through the three empirical chapters looking at place, practices and politics. The final section then explores the implications of this work and the possibilities for alternative boar futures in the Dean and the UK more broadly.

### 9.2 Conceptualising feral bo(a)rderlands

This research explored the dynamic event of unsanctioned boar (re)introduction in the Forest of Dean through the biopolitics of biosecurity and rewilding. However, it builds on other productive work examining the tensions between these concepts

(Buller 2008, 2013; Lorimer and Driessen 2013) by introducing an intimate, ethnographic account that foregrounds the emergent, messy and complex nature of more-than-human worlds (Law 2004).

To further develop a conceptual framework, this thesis has also worked with the concept of 'borderlands', one with a longstanding usage in animal geography, describing communities where "humans and animals share space" (Wolch 2002, p. 188). Here, however, I look more towards its usage in literature where borderlands might be understood as the products of multiple dense, complex and intersecting "spatio-temporal (dis)orders" (Sassen 2006, p. 392). Within the context of disease biosecurity, these borders are considered as being continually reconfigured by the tensions between "different elements", intra-acting at varying vicinities and intensities and "giv[ing] rise to new and novel arrangements through different types of engagement" (Hinchliffe et al. 2016, p. 80). These borderlands, therefore, are contingent, heterogenous and multi-scalar. Furthermore, they are co-produced by 'elements' with different rhythms and logics. Reworking this concept into something more inclusive, this thesis considered how various borderlands emerge and are reconfigured by rewilding events which alter the choreographies and meanings of place, ecologies of biosecurity practices, and mechanisms of nonhuman governance. Within such 'novel arrangements', I show how the (b)orders between different 'elements'- discourses, species, bodies, places, materials, knowledge practices, politics- are enmeshed together.

Much critical literature on rewilding has probed the multiple ethical-ecological motivations of official (re)introductions carried out within conservation practice (Sandom et al. 2013a; Jørgensen 2015; Lorimer et al. 2015; Gammon 2018). As a diverse array of 'wild experiments' (Lorimer and Driessen 2014), rewilding projects promise to reconfigure human-nonhuman relations and offer a new biopolitics through which to rethink singular modernist ontologies and nature-culture divisions (Lorimer 2015). In this regard, I understand rewilding practices, themselves, as

forming borderlands, where dynamic encounters between transitioning knowledges; conceptions of landscape temporality and belonging; (un)familiar humans and nonhumans; and economic practices intra-act to co-constitute something new. However, these accounts also reveal how official rewilding practices, in their current form, are themselves reliant on borders. This juxtaposed 'controlled decontrolling' (Keulartz 2012) often relies upon a variety of (b)orders to regulate and 'experiment' with the ways in which 'wildness', through various relational agencies and autonomies, manifests (Bartolini and DeSilvey, 2018; Prior and Ward, 2016; Ward, 2019). Rewilding in practice, amongst other rigid (b)orders, might carefully select specific nonhuman species and healthy individuals to (re)introduce; install physical infrastructure to restrict movements; or deploy socio-technological monitoring of processes, interactions and liveliness (Lorimer and Driessen, 2016; Prior and Brady, 2016; Vasile 2018).

This thesis, on the other hand, contributes knowledge to a smaller body of literature that is not directly engaged with rewilding as a deliberate though divergent mode of conservation practice, but the ways in which it unfurls autonomously and 'spontaneously' (Buller 2004, 2008; Drenthen 2016; Tsing 2017). These 'unintentional wild experiments' (Hearn et al. 2014) emerge relationally through widespread, changing political ecologies, individual events and the agential capacities of nonhuman life. Importantly for this thesis, such accounts do not frame rewilding as a practice but, rather, as reflecting ongoing, emergent, and relational processes (Ward 2019). Likewise, wildness and wildlife are not distant or intrinsic, but co-constituted of relational autonomies and subjectivities (Prior and Brady 2016). Whilst acknowledging that most rewilding practices and proposals generate social-cultural tensions (Wynne-Jones et al. 2018; Sandom et al. 2019)- hence the (b)orders and protocols that facilitate their implementation- I was keen to emphasise the ways unsanctioned (re)introductions generate distinct ontological and epistemological uncertainties. Therefore, using the political categorisation applied to (re)introduced boar in England (DEFRA 2008), I distinguish these events as ones of 'feral rewilding' and, relatedly, the novel arrangements of elements as

‘feral bo(a)rderlands’. My intention here is not merely to follow the normative term applied to ‘wild’ lives that were once domesticated (Palmer 2010; Donaldson and Kymlicka 2011; Gibbs et al. 2015), but to foreground and probe the multiple disruptive, contingent and generative qualities of feral life (Tsing 2017; Rutherford 2018).



Much research on official rewilding borderlands has highlighted how it unfolds as a tension of multiple spatial-temporalities, understandings of autonomy and wildness, and modes of ordering nonhuman life (Lorimer and Driessen 2013; Lorimer and Driessen 2014; Deary and Warren 2018; Sandom et al. 2019; Sandom and Wynne-Jones 2019). Though important conceptually, these accounts frequently provide a somewhat disembodied approach to rewilding, with the focus often on discursive or theoretical debate detached from the lived, quotidian realities of relational life. Moreover, though human-boar relations have historically been of interest in wildlife management literature, this has tended to focus on quantitative approaches considering ‘impacts’ and ‘damage’ to agricultural spaces (Massei and Genov 2004; Massei et al. 2011; Barrios-Garcia and Ballari 2012), terminology I find uncomfortable for its rather singular, anthropocentric perspective on nonhuman behaviour and presence (Head 2007). Relatedly, qualitative research addressing human-boar ‘conflict’ in Europe has centred almost exclusively on discursive and representational debates involving key rural stakeholders, primarily, farmers and hunters (Frank et al. 2015; Storie and Bell 2017). As this thesis itself shows, discursive knowledges and methods play a critical part of social science studies into rewilding and boar. In sum, however, such approaches alone are not best suited to attend to the relational, messy, lively, uncertain, fluxing, and multi-sensory dynamics of the worlds they research (Law 2004; Hinchliffe 2007).

A key contribution of this thesis, therefore, is its use of an ethnographic methodology to explore the meaningful places, practices and politics that are being reconfigured through feral bo(a)rderlands in England. This ‘feral ethnography’, a

contingent assembling of multi-sensory, mobile, interactive and discursive methods, emerged from my desire to bring the influences of several different strands of literature together- human geography, STS, ecology, biology amongst others-, and to provide an account that is appropriately 'attentive', not only to animal geographies and agency (Hodgetts and Lorimer 2014), but nonhuman difference and multispecies politics more broadly (Kirksey and Heimreich, 2010; Tsing et al. 2017; Van Dooren et al. 2016). Using an assemblage of methods- interviews, observation, photography, video, tracking- brought out the material and discursive aspects of feral bo(a)rderlands: mud, wallows, carcasses, snorts, head lifts, bracken, exposed roots, thermal images, cold larders, diseased livers, dog leads, camouflage clothing, council chambers, rolling eyes.

Specifically, the ethnography focussed on the Forest of Dean, Gloucestershire. Bo(a)rderlands are multiple and become significant where there is increased 'friction' and an 'intensification' of intra-acting, situated and (dis)orderly relations (Hinchliffe et al. 2016). Such understanding helps emplace the event of feral rewilding in the Dean, the locality where the presence of (re)introduced boar has become most contentious in the UK. Though England, particularly, has a benign climate which is well suited for the once 'native' boar (Sandom 2013a, 2013b), Dean bo(a)rderlands appear particularly 'intense' in comparison to others (O'Mahony 2020). Importantly, therefore, I do not represent this example of feral rewilding as a definitive case that can be scaled up or applied to all other bo(a)rderlands within or beyond the UK, nor rewilding situations involving other species. Rather, its findings have been drawn out of the specificity of the Dean, though in ways that speak more broadly about ferality, human-nonhuman relations, and the ways in which life is conventionally (b)ordered. Furthermore, it contributes critical social research on boar in England which, over the last 15 years, has been more elusive than the animals themselves. Situating myself in the Dean and undertaking 'slow research' (Law and Singleton 2013) offered a diversity of ways to answer my research questions: i) have (re)introduced boar reconfigured pre-existing relations, rhythms and understandings of place; ii) how have government wildlife agencies sought to

know and secure the presence of boar; and iii) how have strategies and modes of governance been implemented and contested?

### **9.3 Analysing feral bo(a)rderlands**

Rather than systematically summarising the findings of my chapters individually, this subsection is structured around three prominent ways I have come to understand ferality as manifesting through Dean bo(a)rderlands: feral spatialities, feral temporalities, feral (in)visibilities). Importantly, these should not be considered clean and distinct cuts, but, ones that intra-act and, consequently, self-reference. Likewise, this is not a dogmatic way in which to organise feral bo(a)rderlands but, rather, one that reflects key threads that emerged during this research and with relevance to the three research questions.

#### **9.3.1 Feral spatialities**

Firstly, this thesis has contributed to knowledge exploring the multiple ways in which nonhumans 'transgress' human modes of (b)ordering space (Philo and Wilbert, 2000; Buller 2008; Collard 2012; Barua 2014). By escaping, being released or being 'dumped', boar in the Dean have exerted agency beyond the confines of the regulated farm space and 'borderlines' within which they were originally placed (Hinchliffe et al. 2013). Secondly, however, rather than dis-locating themselves from humans, I have demonstrated that some boar in the Dean are drawn back towards humans, cohabiting in proximity to their homes and infrastructures, contributing a British context to similar accounts throughout continental Europe (Licoppe et al. 2013). Dean boar, as a population, appear 'transboundary' (Buller 2004), moving through the porous spatial (b)orders in the dean and (re)introducing their own lively and unfamiliar 'beastly places' (Hodgetts and Lorimer 2018; Philo and Wilbert 2000). In contrast to the regionalised, striated space of human territories and land ownership, boar mobilities appear dynamic and embody smooth and fluid space (Murdoch 2006).

Boar, I suggest, embody feral capacities to live and persist within proximity to humans. My research has shown that the explanations for their proximity are contested, whether biopolitical framings of a burgeoning population, or else ecological responses due to disturbance. In the Dean, their generalist foraging for, amongst other food, invertebrates, bulbs, roots and human rubbish, brings them to village edgelands and into 'forest waste', amenity spaces and gardens. Furthermore, inhabiting 'in-between' (Philo and Wilbert 2000), they have also adapted to the mosaic of human land use, notably Forestry Commission practices adjacent to settlements, using dense coniferous plantations for daytime resting and open broadleaf stands to forage. Importantly, I have shown that their mobilities, family dynamics and 'more-than-human socialities' (Tsing 2012) flux and pulse. This, therefore, not only unsettles hegemonic modes of (b)ordering nonhuman lives and their appropriate spaces, but, importantly, also acceptable distances and with what symbiotic intensity. High degrees of 'intension' heighten the threat of ferality (Hinchliffe et al. 2013).

In seeking to emphasise embodiment and mobility, my research has shown that feral proximity generates a range of affective, intersubjective boar encounters that are not merely incidental, but have the capacity to reconfigure the atmosphere of place. Thinking through the 'affective logics' of 'nonhuman charisma' (Lorimer 2007b), I showed how encountering boar for some people generates 'enchanted' experiences (Brettell 2016; Lorimer and Driessen 2013), whether in relation to the immediacy of the affective encounter; or else through associated imaginaries of wild pasts and futures, the kind of argument that often stimulate rewilding advocates (Monbiot 2014). Such multispecies encounters and close, symbiotic relations are discussed as generating positively transformative relations (Haraway, 2008), however, in the context of boar, humans, and sometimes their companion dogs, encounters often manifest as risky and undesirable.

Working with the notion of affect (Anderson 2010), my ethnography has shown how different materialities, visibilities, velocities and proximities might all influence the affective intensities of multispecies encounters, whether tall or dead bracken; running or trotting dogs; spacious or narrow forest tracks; muddy hoofprints or hard ground. Critically, over time many people have 'attuned' (Despret 2013) to the more-than-human atmospheres of the forest and patterns of boar behaviour. This, along with a reliance on past experiences and shared knowledge helps anticipate and negotiate encounters, according to whether individuals want to engage with boar or not. Importantly, however, this depends on the autonomous activities of boar. Moreover, both relational theories proffering movement as agency and life as processual becomings (Buller 2012; Ingold 2011), along with research from movement ecology (Morelle et al. 2014; Morelle et al. 2015), help frame boar as equally reflexive, agential and learning, responding in different ways- running away, trotting towards, standing up, snorting, head tilting, ignoring or avoiding- according to their individual senses and relational ecologies.

By foregrounding boar movements, I have also demonstrated that one of the key social-political tensions within Dean bo(a)rderlands relates to the disturbing, spatial fluidity of boar through the unique spatial mosaic of the Dean itself. Critically, the forest-settlement border is almost completely permeable, meaning humans and nonhumans that so desire can move relatively unhindered throughout, however, legal territories are more rigid and less obliging. After several decades without a specific boar policy, the thesis has highlighted one of the key political interventions of the 2008 DEFRA Action Plan, "Feral wild boar in England", was to determine boar management as the 'responsibility' of 'communities' and 'individual landowners', a non-interventionist approach reflecting other wildlife management policy in the UK (Phillip et al. 2009). However, drawing on the notion of an 'institutional void' (Hajer 2003), this appears to have left a spatial void in which no authority is willing to take responsibility for boar inhabiting the shared, public space of villages and towns. Furthermore, though multi-actor governance strategies are often increasingly within conservation and biosecurity practices (Adams 2014; Donaldson 2013), I

suggest that diffusing responsibility without a central, guiding authority has also prevented the effective enactment of a broader, coherent 'regional management' strategy. Under such circumstances, boar, embodying smooth space, deterritorialise and disorder the management plan. Finally, the thesis also emphasises another mode of uncertainty, this time in collective terminologies such as 'community' and 'public'. As enacted through the Action Plan, these appear to have been imagined as coherent, homogenous and with a static character, rather than dynamic, fluid and diverse (Murdoch 2006; Rommetveit and Wynne 2017; Shucksmith 2018). In reality, I have demonstrated the Dean is a multiplicity of discordant publics, communities and individuals with diverse and conflicting ontologies, not only of boar belonging and management, but nonhuman life more broadly.

### **9.3.2 Feral temporalities**

The normative, political framing of ferality, applied to 'wild' nonhumans that were once domesticated (Peterson 2011) highlights it is not just a spatial (dis)order, but also a temporal one. Firstly, though rewilding literature spends much time conceptualising 'historic baselines' and futures (Jorgensen 2015; Lorimer 2015; Prior and Ward 2016), other temporalities have been overlooked. Drawing once more on understandings of agency as produced through movement, process and intra-action (Ingold 2011; Buller 2012), along with ecological literature (Morelle et al. 2015), this thesis explored how feral rewilding (re)configures the multispecies choreographies and rhythms generate meanings in the ongoing performance of 'place-binding' (Edensor 2010a; Ingold 2008; Cresswell 2015), something that has been critically overlooked in animal geography and rewilding literature. Relatedly, by focusing on mobilities and practices, I was able to foreground embodied movements and multispecies agencies, demonstrating how modes of interaction and the affective intensities of co-habitation shift and flux endlessly in relation to other lives and processes, whether seasonal climatic changes, arboreal transition, the hatching of invertebrates, blooming flowers, or human activity. I have already

highlighted how boar are ongoing, creative becomings, but they are polyrhythmic, whether annually, daily or otherwise. Importantly, while these might occur synchronously and convivially with other Dean rhythms, they can also be arrhythmic and asynchronous (Lefebvre 2004; Tsing 2015). Feral rhythms, therefore, are precarious, disrupting and disturbing, exerting agency and reconfiguring multispecies formations in (un)desirable and ontologically (in)securing ways.

Importantly, nonhumans are not (re)introduced into absolute space, but complex cultural landscapes 'layered' with meanings and identities (Drenthen 2009; Deary 2015; Drenthen 2018). Some nonhumans fit more readily within the spatial-temporalities and meanings of place- perhaps for being benign, non-intrusive, quiet, timid, compliant and historic- and might be incorporated into the iconography of cultural landscapes (Buller, 2004; Matless, 2005). Others, in the case of boar, embody a more unruly, feral transition. In the Dean, I suggest there are several temporal factors that have made this specific feral bo(a)rderland complex, aside from the spatial fluidity and (in)visibility of boar. Firstly, the spatial proximity of many residents to the porous forest border means they have formed a distinct social relationship with their more-than-human co-habitants and might be intimately affected, positively or negatively, by changing ecologies and multispecies cohabitants. This, in turn, generates tensions between diverging nonhuman ontologies, epistemologies and ethics, some of which are deep-rooted and longstanding, others of which have emerged with specificity to boar. Therefore, political tensions circulate, flux and intensify as nonhuman relations, too, 'flow and churn' (Law and Mol 2002). Finally, boar (re)appeared in such a cultural landscape already undergoing a complex and affective series of ecological, economic and social changes. Notably, the recent Foot and Mouth epidemic which had led to the demise of another key constituent of Dean culture, sheep, which were a corporeal presence and key actant in forest aesthetics. Whereas sheep might represent order, continuity, familiarity, predictability and tidiness, boar embodied an altogether different element of disorder, rupture, uncanniness, unpredictability and mess. The

intensity of ferality, therefore, is in relation to ‘temporal thresholds’ of nonhuman belonging (Head and Muir 2004), (un)familiar pasts, affective memories, cultural associations, and conceptions of the (non)linearity of time (Cresswell 2015).

Finally, by unsettling the immediate, in-motion present, by association, (re)introduced and feral lives also generate multiple, novel futures (Tsing 2017; Tsing et al. 2017). Since their (re)introduction, Dean bo(a)rderlands are perceived as a wilder and more unpredictable place by most inhabitants, for better or worse. The spatial-temporal scales and interpretations of uncertainty, however, diverge (Barker 2015). For some, its immediate and proximate manifestation, as encounter, is one that might be anticipated, sought or negotiated or feared (Collard 2012). For others, uncertainty manifests with a less immediate temporality, but affectively lingers through ‘incipient’ possibilities, whether the threat of emergent life and economic or ecological catastrophe (Braun 2013); ecological loss and disappearance (Head 2016; Tsing et al. 2017); or else, exciting and promising futures (Lorimer and Driessen 2013). Specifically, in the Dean, I have shown this might relate to pre-established practices of multispecies care, such as farmers worried for livestock, or else naturalists worried for protected species.

However, the thesis has shown ferality, in the context of boar, is difficult to secure. Not only does it persist in liminal timespaces that unsettle humans, it can also undermine orthodox approaches to biosecurity and wildlife management seeking to render populations static. Nonhuman life, exemplified by boar, is dynamic and non-equilibrium (Hinchliffe 2007; Lorimer 2015). However, ferality is potentially ‘proliferate’ and thus understood as a ‘biothreat’, becoming a temporal matter bound up in an anticipatory politics seeking to pre-empt and intervene in insecure futures (Hinchliffe and Bingham 2008; Braun 2013). Supporting literature from elsewhere (Hearn et al. 2014; Keuling et al. 2016; Massei et al. 2011), this thesis shows in the in the right relational conditions e.g. the Dean, boar are able to flourish through their intra-actions and biological possibilities. Feral life, therefore,

embodies different times and ticks with different biological clocks (Adam, 1996). These are potentially asynchronous with other social, political and ecological temporalities, and generate uncertain, feral futures into which governing authorities seek to intervene.

### **9.3.3 Feral (in)visibilities**

Despite their potential proximity and the chance of encounters, boar often appear corporeally elusive. However, this is not necessarily the same as being entirely absent. Ferality, therefore, also manifests with differing grades and forms of (in)visibility. It challenges, in other words, the capacity to know. (In)visibility is not to be understood as an intrinsic quality, but rather something that forms and is co-produced through the relational worlds within which life lives (Murdoch 2006; Hinchliffe 2007). For boar, it is in relation to the material assemblages and 'more-than-human socialities' with which they inhabit (Tsing 2012). In the Dean, this thesis has demonstrated that boar are not most commonly visible through direct encounter, but through their foraging, tracks and traces: upturned forest soils; sloppy, muddy puddles; rooted paths; or clumped turf. Boar visibility, as much as corporeal presence, churns through landscapes, sometimes extensively and repetitively. This not only makes the Dean 'unscenic' and aesthetically discordant (Prior and Brady 2017), but also amplifies their affective capacity and complicates ontological understandings of what boar 'are'. Ferality, therefore, is simultaneously elusive and messy.

Appearing elusive, uncontrollable and asynchronous highlights another aspect of ferality, namely, that some forms of life might be unknowable, or, at least, challenging to know well (Hinchliffe 2007). This, I have suggested, challenges the ability for authorities to govern territory (Murdoch and Ward 1997; Murdoch 2006) and individuals to feel ontologically secure. By exploring the praxiographic hinterland of culling and monitoring, the thesis responds to calls for, and work on, the practices and materialities of ecological field sciences (Hinchliffe et al. 2005;

Lorimer 2008; Forsyth 2013; Mason and Hope 2014) and their relationship with culling and other practices of security (Enticott 2001; Hinchliffe and Lavau 2013; Crowley et al. 2018; Boonman-Berson et al. 2018). Firstly, paying attention to the 'hinterland' (Law 2004) of government agency practices has shown how boar charisma and their relational agency can become visible in the forest through a range of applied 'affective logics' not dissimilar to the situated knowledges of other people. However, 'learning to be affected' (Latour 2004) and relying upon processes of 'attunement' (Despret 2013) to specifically locate boar for the purposes of counting and killing is difficult. Feral lives might appear omnipresent, but, curated encounters can be evasive and uncertain. In particular, biosecurity regimes focussing on (re)introduced species, therefore, require 'tinkering' to find effective technologies, choreographies and ecologies of practices (Mol 2010; Hinchliffe and Lavau 2013). I have shown boar visibility in Dean bo(a)nderlands is a relational achievement that requires performative knowledge assemblages (Law 2004; Lien 2015) that topologically connect the forest, labs and larders using technologies to translate bodies, images and statistics. Finally, securing boar does not merely relate to their physical bordered bodies, but also the lively assemblages of which they are co-constituted (Barker et al. 2013; Hinchliffe et al. 2016). In the Dean and beyond, boar risk relates as much to the viral or bacterial pathogens with which they intra-act, as it does to boar as a singularity. This demonstrates, therefore, that ferality is indeterminate, highlighted not only through the multiple lively agents within bodies (Barker 2014), but also in its ambivalence to genetic purity.

Mutable visibility and reducing feral life to collectives without intraspecific difference helps order their presence, territorialise space and frame a calculative biopolitics that makes them more readily cullable. However, I have also highlighted the multiple 'interferences' that problematise field work and, thus, make such practices awkward (Law 2004; Hinchliffe and Bingham 2009). Whilst this is partially related to aforementioned factors, critically, it is also because official practices of knowledge production do not occur in isolation, but in relation to wider, social

contexts and in public environments. Using literature from STS, I have argued boar monitoring is partly driven by a need for governing agencies to position themselves as knowledgeable in ways distinguishable from those of situated publics (Latour 1993). This defensive formalisation was spurred by growing 'controversy' and critical publics that emerged around boar. In the Dean, this is situated in a lingering distrust of authority, particularly the practices of wildlife management agencies who are perceived to be secretive. Rather than asserting authority and smoothing interferences, however, statistical and methodological visibility has stimulated political contests. This, in turn, has become embroiled in wider Dean politics and issues relating to the (in)visibility of alternative knowledges and nonhuman ontologies, and strategies of wildlife governance (Wynne 1992; Whatmore 2009; Enticott and Wilkinson 2013; Redpath et al. 2013).



Boar, as enacted through legislation as well as through their own agential capacities, relations, genetics, biologies mobilities and histories have provoked the tensions in socially constructed orders such as (non)nativeness, (im)purity, domesticity and wildness. They show that conceptions of place and material landscapes flux, pulse and transition through their more-than-human agencies as well as those of humans. Boar unsettle territorialising human practices and reveal how they struggle to contain nonhuman life. Furthermore, they suggest there are limits to the extent to which nonhuman life and its various symbiotic intra-actions can be known. Finally, their complexity and multiplicity of manifests in ways that problematises human relations and social dynamics and leaves a variety of places, practices and politics in tension.

#### **9.4 Alternative feral bo(a)rderlands**

The mess, relationality and interconnectedness of feral bo(a)rderlands can be troubling. Ferality, as I have concluded, might manifest through multiple spatial-temporal (in)visibilities that disorder places, practices and politics and generate

borderlands. Ferality is, in the case of boar, transgressive, proximate, intense, reflexive, rhythmic, proliferate, elusive, messy and indeterminate. This is not an exhaustive classification, rather, it highlights some aspects that emerged in the Dean and no doubt cause tension in other rewilding events. These elements, through their multiple entanglements, make ferality “risky... by shred[ding] certainty and violat[ing] limits” (Rutherford 2018, p. 217). In the Dean, ferality has unsettled established modes of (b)ordering, knowing and communicating. It has not only highlighted the relationality of space, time and life, but also the problems with trying to regionalise, territorialise and striate it (Murdoch 2006; Hinchliffe 2007). This emphasises that absolute control of nonhuman life is impractical and undesirable, not just ethically, but because it reflects the “contingent ‘becoming with’” others which defines it (Haraway 2008, p. 281). In other words, extermination is not the solution to problematic multispecies relations, as shown through past endeavours (Head 2016). Indeed, the violent, ecological disruption and species extinctions that partially define our monstrous entanglements in the Anthropocene and, indeed, often drive official (re)introductions, show that purification is not a valid solution (Tsing et al. 2017).

Thinking through feral rewilding and feral bo(a)nderlands, therefore, can also be generative in helping consider how we live with, value and govern the ambiguities, uncertainties and contingency of, in Ginn et al.’s (2014), ‘awkward’ species. Conceptually, ferality reflects the tension of the monstrous, “the wonders of symbiosis *and* the threats of ecological disruption” (Tsing et al. 2017, p. M2). Boar highlight the vulnerability of both humans and nonhumans in their intimate entanglements, cautioning against the unequivocal acceptance of all forms of difference (Lorimer 2015). However, like other feral and monstrous creatures, they are ‘promissory’ as well as ‘risky’ (Lorimer and Driessen 2013). Though this thesis has focussed on feral rewilding tensions in the Dean, many of these pertain to other human-wildlife relations, whether extant conflicts and controversies, or else potential, rewilded futures. Indeed, the emergent, precarious and processual becoming of life means that relations always change. As shown in the Dean, a

relatively benign, feral rewilding event 15 years ago has intensified into something more affective and monstrous. However, in Haraway's (2008) words, there is no 'final peace'; living with nonhumans always requires work. This final subsection, therefore, reflects both on my research, and considers the possibilities for alternative futures.

Theoretically, borderlands share a commonality with the 'multi-natural' thinking that has challenged spatial and moral boundary-making practices separating nature and culture (Latour 2004b; Hinchliffe 2007; Lorimer 2012). Indeed, one of the implications of binary rationalities is to distinguish between the authority of natural and human sciences. Multi-naturalism suggests that living with others requires an openness to relationality, multiplicity and difference. Likewise, borderlands and ferality both infer varying kinds of 'symbiosis', bringing together and unsettling the purity of ontologies, epistemologies and academic disciplines. This is a commonly shared call across a range of subject areas for collaborative work where matters of fauna are concerned (Woodroffe et al. 2005; Kirksey and Helmreich 2010; Buller 2013a; Hinchliffe et al. 2013; Redpath et al. 2013; Tsing 2015; van Dooren et al. 2016; Enticott 2017; Rutherford 2018). These infer the need for more coherent, conjoined understandings, experiences, practices, spaces and knowledges. This might involve diversifying, decolonising and accommodating knowledges, valuing different 'affective logics' (Lorimer 2015) and 'affective ethics' (Hinchliffe 2007), and slowing down decisions to be more deliberative and inclusive (Callon et al. 2009; Whatmore 2009). However, choreographing such interdisciplinary, ecological productions of knowledge is risky, lively and challenging (Buller 2009). The question, therefore, is how research and policy can develop to help smooth, soften, provoke, and probe feral rewilding. How can it be more reflexive and 'response-able' (Haraway 2008) to transitioning worlds that are simultaneously risky and alluring, material and discursive, actualised and imagined? How can knowledge borderlands contribute to better, future UK bo(a)rderlands?

### 9.4.1 A more ecological Dean

Thinking of the Dean as an ‘intentional wild experiment’ (Hearn et al. 2014) opens opportunities not just for academic research but also the practices of governing authorities. During fieldwork, my ‘reconnaissance’ ethology (Lehner 1998) helped me learn about boar in my patch. I was aware of a multi-generational sounder who split when the females were ready to have piglets; the resultant bachelor group of young males who were accompanied by a mature male; the two sows who had piglets and weeks later re-joined the larger group; and another female who also had piglets but didn’t join the larger group permanently. At least, this is what I thought was going on. I tried to recognise individuals or small groups and when I thought I had, sometimes I realised I hadn’t. On camera traps, I often found it hard to identify males and females. Like many residents, I became more ‘attuned’ (Despret 2013) over time, but only to a degree. Understanding boar is difficult! Though animal geography often calls to recognise individual nonhuman difference beyond the population or collective (Bear 2011; Lorimer 2012; Buller 2013a; Johnson 2015), the ‘charisma’ (Lorimer 2007b) of individuals of certain species, it seems, is less readily apparent than others. This susceptibility to being seen as ‘mass’ (Buller 2013b) becomes an ethical issue, for they are more easily rendered, to rework Haraway’ (2008) term, ‘cullable’ as a population. Indeed, as the thesis has shown, boar management is ‘a numbers game’, both in the Dean and elsewhere (Massei et al. 2011; Boonman-Berson et al. 2018).

However, as Boonman-Berson et al. (2018) has also discussed, this thesis has suggested understanding boar purely through statistics is not necessarily an effective mode of control, at least not alone, nor way of improving how humans and boar can live together. Calculative logics overlook the difference, creative and processual nature of animals, humans or otherwise (Ingold 2011; Buller 2012). Many tensions surrounding boar relate to the ways their topological movements trouble territorialised, topographic demarcations of space. As in the Dean, orthodox biosecurity concerns in agricultural regions (EFSA 2014; Morelle and Lejeune 2015;

Keuling et al. 2017) and insecurities in 'urban' spaces (Licoppe et al. 2013) arise from fluid boar mobilities, however, this does not appear entirely reducible to calculative factors. For example, research in Barcelona suggests boar are multiple- some are forest dwelling, some liminal and some urban dwelling (Cahill et al. 2012). In other words, they have different cultures, habits and preferences. Management strategies have adapted to target problematic boar i.e. urban dwelling, rather than treating all animals as of a kind. Furthermore, hunting practices have been shown to affect boar behaviours and movements in multifarious ways, including increasing fecundity (Keuling et al. 2008b; Thurfjell et al. 2013b; Frauendorf et al. 2016). Boar geographies and populations, therefore, are influenced by complex intra-actions between intrinsic and extrinsic factors (Morelle et al. 2014; Morelle et al. 2015). Furthermore, they show a diversity of behaviours in different locations according to their relations, particularly those with humans (Keuling et al. 2017). In other words, boar act with intraspecies difference. In the Dean, on the other hand, there is little outward consideration by officially produced knowledges of such diversity in their daily, seasonal, or irregular rhythms. Nor is it known which boar are moving beyond the forest and through settlements- males, females, specific sounders, or orphaned piglets?

As Chapter 8 noted, boar governance appears to have suffered because of austerity related issues around government resources and departmental restructuring. However, were funding secured, possibly through independent research groups or academic institutions. utilising an assemblage of scientific technologies would further understandings of Dean boar and their movement ecologies. As highlighted previously these offer interdisciplinary opportunities for social and natural scientists to track animal mobilities', behaviours and relational autonomies (Hodgetts and Lorimer 2015; Hodgetts and Lorimer 2018). This could be done through GPS or radio tracking, something considered for this thesis though found unsuitable due to the complex regulations, ethics and expertise required for such work. Though government agencies previously carried out similar research, this was deemed unsuccessful because collared boar were killed relatively quickly (DEFRA 2004).

However, this research was carried out to the north of the Dean in an agricultural landscape where boar were managed privately by farmers and stalkers, rather than on public estate. Furthermore, technology has since advanced, with GPS ear tags and collars more affordable than before. Alternatively, a more extensive camera trapping project could be carried out to better map boar dynamics and behaviours throughout the forest. This could be more widespread than my 'reconnaissance' approach, or reflexively target locations with 'problem boar', whether intra-forest hotspots or forest edges. Once again, though government agencies have used cameras in the forest, this was to experiment with population counts, rather than to explore boar ethologies (DEFRA 2014b). Finally, there are also possibilities to collect and analyse boar faeces, a common technique in European countries, enabling DNA analysis and identification of individuals, relations, as well as studies into the spatial-temporal changes in diet, fluxing boar movements (Ballari and Barrios-García 2014; Castillo-Contreras et al. 2018), something particularly useful when understanding liminal boar around human settlements (Stillfried et al. 2017c).

Of course, such surveillance exerts varying modes of biopower with ethical ramifications (Benson 2016; Adams 2017). However, if scientific practices make realities (Latour 1993; Law 2004), then ecologising these would help, in turn, ecologise boar and boar politics (Latour 2004b; Hinchliffe et al. 2005; Hinchliffe 2008). 'Tinkering' with practices and technologies would not only alter translations of boar but also enact a more care-full and 'response-able' mode of engagement. A better knowledge of boar as creative, sentient, social entities could not only inform a more ethical way of relating, but arguably inform a more effective, relational and considered approach to regulating adverse human-boar interactions. This, it is important to reiterate, is not envisaged as an absolute embrace of unfettered difference. Feral lives are risky and, thus, (b)orders and interventions of different kinds serve a valuable role in securing 'life against life' (Braun 2013). In other words, boar need to be managed within the landscape of the Dean. However, doing so without regard for complexity, without 'knowing around' ecologies, is not only ethically questionable, but has also been shown to perpetuate a multiplicity of risks

(Braun 2013; Hinchliffe et al. 2013). Therefore, ecologising boar, and the Dean more generally, and applying a more 'ethical taxonomy' to killing is needed to better manage their presence (Van Dooren 2014).

#### **9.4.2 A more inclusive Dean**

While diversifying scientific knowledge and 'knowing around' boar is important, this would not necessarily be a panacea to social tensions, as many environmental knowledge 'controversies' have proven (Wynne 2006; Whatmore 2009). Whilst some tension in the Dean might be eased by generating better ecological understandings of boar, as exemplified in 'conservation conflicts' with other species (see Redpath et al. 2013), the frequent failure of 'educational deficit' models of political participation highlights the problems of such a strategy (Callon 1999). Indeed, distrust of official, scientific knowledges is often deep-rooted and ontological (Lash et al. 1996) and, as this thesis has shown, the lack of faith between publics and governing authorities is deep rooted and situated in the Dean. Critical, it seems, is the need for various Dean authorities to, firstly, collaborate and, secondly, be inclusive in ways which are genuinely participatory, rather than tokenistic, as shown elsewhere (Owens 2000; Davies and White 2012; Redpath et al. 2013). This, problematically, requires constant effort and the desire of organisations to steer an inclusive management strategy. It also needs the meaningful engagement of publics, something that has not occurred due to the spatialised diffusion of responsibility through policy, and the complex social-political relations of the Dean.

However, there are possible paths along which multiple publics and communities could be brought together in productive ways, including opportunities to expand and develop the work (and limitations) of this thesis. For example, 'citizen science' camera trapping projects have the potential to be collaborative and enable different actors to work collaboratively to analyse and observe data. This could involve, amongst others, residents, naturalists, boar researchers, FC officers and

academic researchers with differing boar ontologies working together and sharing their divergent knowledges, experiences and interpretations of boar. Whether carried out individually, or else through focus groups to generate discussion between similar or diverse collectives (Davies and Dwyer 2007), this might help find a 'middle ground' that brings ethnological and ethological techniques together (see Barua and Sinha 2017a; Lestel et al. 2006; Lestel 2014). Such activity, if co-ordinated properly, could allow decision-makers a more direct and non-hierarchical way to gather different kinds of knowledge, not with the intention of confrontation, but to find productive overlaps, gaps and grounds for co-producing better human-nonhuman understandings. In addition, another participatory method would be collective or individual go-alongs. These elicit experiential, sensory knowledges of landscapes which can generate maps or topological 'diagrams' (Gan and Tsing 2018). Participatory mapping, akin to Landström et al's (2011) 'participatory modelling' experiments, offers opportunities to share spatial-temporal understandings of the fluxing intensities of human-boar relations. By bringing together divergent forms of knowledge and types of experience, bo(a)rderlands can be 'storied' (van Dooren and Rose 2016b), helping reveal the multiple micro-geographies of tensions, risks and enchantments. The possible outcomes of these would be various depending on the desires of participants, however, they could help individuals negotiate landscapes; authorities to reconfigure the permeability of particular borders; co-ordinate more selective approaches to intervention, whether through lethal or non-lethal means; or provide points of communication, advice and engagement.

It is clear national policy and local governance strategies have contributed to bo(a)rderland tensions. This is partly because of the disjunct between territorialised landownership, ambiguous responsibilities and fluid boar movements. Though the Action Plan theoretically addressed the prospect of boar beyond privately owned land by making them a 'community' matter that should be more broadly co-ordinated by 'regionalised management', as in other research, I have shown the logistics of the current approach have generally been determined by the desires

and epistemologies of a small number of stakeholders, primarily, the Forestry Commission and the District Council (Irwin 2006). Arguably, however, it appears the local strategy ought to be rethought, particularly with regards to the way liminal, syn-urban boar are negotiated. Currently, situations arise where there is a void of responsibility for boar and authorities who are not deemed directly responsible are reluctant to intervene and help. This abdication of authority is a source of contention in the Dean. There would appear to be interesting opportunities for experimentation with more 'deliberative' and 'co-productive' approaches (Callon 1999; Callon et al. 2009), therefore, to address such individuals or sounders, ones that could include different knowledges and 'redistribute expertise'. In other words, borderland research that facilitates an openness to different voices, knowledges and practices (Hinchliffe et al. 2013; Enticott 2016).

### **9.4.3 Beyond the Dean**

Whereas participation in this thesis was weighted towards Dean residents and other actors in proximity to the Dean, future UK research in the UK ought to expand to other localities. Though exploring the complexity of relations that has made the Dean an 'intense' bo(a)rderland has been empirically and conceptually valuable, better understanding how feral rewilding is (re)configuring landscapes and producing new spaces elsewhere is also important. For example, since early studies in East Sussex (Goulding 2002, 2003) and Dorset (Wilson 2003), there has been no further academic research exploring how these bo(a)rderlands have been unfolding. Likewise, in other parts of the UK, such as Dumfries and Galloway, where feral individuals are known to be present, little is understood about how they are affecting the cultural, ecological and political landscape. Furthermore, there are many other small, fleeting and fluid populations of boar around the country that are unrecorded or else uncertain- beyond incidental reports to Natural England, DEFRA keep no formal register of either feral boar nor boar farms (a source of biosecurity concern for farmers). Though I am not suggesting that it is necessary to account for all of these- they are inherently uncertain- building and awareness of

what is happening elsewhere would appear socially, ecologically and politically important. As this thesis has highlighted elsewhere, whilst the case in Dean is not anomalous with situations elsewhere in Europe i.e. that human-boar relations are increasingly frictious (Keuling et al. 2018), it is also distinct.

For authorities in the UK, improved understanding of present bo(a)rderlands can also help pre-empt future ones. This is not necessarily so they can be prevented- as boar have shown, they constantly evade borders and create new territories- but more to consider points and places of negotiation or non-negotiation (Murdoch 2006; Enticott 2008). Relatedly, as boar move through the countryside, so they will increasingly encounter people who have, or will gain, different knowledges about them- vets, agricultural stakeholders, boar farmers and wildlife managers (e.g. stalkers), for example. Though some participants in this research had accumulated knowledge through such engagements, the thesis generally followed a different path. However, expanding understandings of the knowledges produced by such practices is important and, moreover, would also build greater connections to other qualitative literature European boar, which tends to focus on these more classic, rural stakeholders (Hearn et al. 2014; Keuling et al. 2016; Storie and Bell 2017). In particular, research into the practices of actors involved in regulating the traditional biosecurity borderlines between agricultural bodies and spaces and 'wild' ones would broaden discourse that is increasingly framed in reference to the incipient threat of African Swine Fever emerging in the UK (APHA 2017; More et al. 2018).

I also argue the 2008 National Action should be re-opened and reconsidered. This was devised at a time when boar numbers were small, elusive and more prevalent as scattered populations diffused through highly striated and privatised agricultural landscapes and living away from settlements. The belief was that individual landowners, acting with sovereignty, would control them on their own private land and boar would remain spectral. At this time, the population in the Dean was estimated to be around 90-100 (DEFRA 2008). However, as I have demonstrated,

boar numbers have grown, and their behaviours changed. Boar as processual becomings are no longer an entirely 'rural' inhabitant but appear increasingly anthropophilic. Revisiting the plan is advisable for different reasons. Firstly, in the Dean, it has proved ill-equipped to deal with the ecological tensions caused by boar, nor the social-political ones emergent from its distinct territory. This is partly due to policy, and partly implementation. Secondly, there are legislative and ethical tensions i.e. being feral, that overshadow vitally needed discussions in the UK about how we live with, kill with, and eat with nonhumans (Haraway 2008). A new Action Plan should make regular and inclusive public dialogue and interactions imperative. Giving space and establishing paths for communication, inclusion, trust, transparency and a sense of influence seems critical for bo(a)rderland matters. Boar effect different people in different ways, generating multiple spatial-temporal and multi-scalar concerns. This makes participatory and collaborative approaches to governance and decision-making hard and often undesirable, but vital. Third, and most significantly, the boundary event of the Anthropocene is transforming human-nonhuman relations (Lorimer 2015). Ecologies are increasingly emergent and dynamic, ecosystems novel in their assemblages, and lives imbricated in others. Indeed, as formalised rewilding practices gather traction, they promise changing rural and urban landscapes, new nonhuman actants, uncertain processual relations and vibrant encounters. Ferality in some of its guises- transgression, proximity, intension, reflexion, rhythm, proliferation, elusiveness, messiness and indeterminacy- will increasingly be the norm. As UK bo(a)rderlands persist and grow, they will increasingly disrupt cultural landscapes, enchant futures, embody incipient threats and promise diversity. A borderland politics, therefore, is needed to experiment and find more feral modes of (b)ordering, knowing, securing, governing and co-habiting in entangled, multispecies futures.

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APPENDICES

11.1 Appendix A

CAMERA TRAP LOCATIONS AND CAMERA TRAP VIDEOS

LOCATION	1	2	3	4	5	6	7	8	9
ENVIRONMENT	Muddy birch tract	Dense conifer stand	Bracken/ birch border	Birch Regeneration	Conifer/ willow	Conifer/ beech border	Open forest	Bracken/ birch border	Open forest
KEY ACTIVITY	FORAGING	COMMUTING	FORAGING	FORAGING/ COMMUTING	WALLOWING	COMMUTING	FORAGING	SCRATCHING/ MARKING	COMMUTING
Jan-17	13- Jan	13- Jan							
Feb-17			03- Feb	03- Feb					
Mar-17			23- Feb	23- Feb					
Apr-17									

LOCATION	1	2	3	4	5	6	7	8	9
ENVIRONMENT	Muddy birch tract	Dense conifer stand	Bracken/ birch border	Birch Regeneration	Conifer/ willow	Conifer/ beech border	Open forest	Bracken/ birch border	Open forest
KEY ACTIVITY	FORAGING	COMMUTING	FORAGING	FORAGING/ COMMUTING	WALLOWING	COMMUTING	FORAGING	SCRATCHING/ MARKING	COMMUTING
			21- Apr						
May-17	18- May			18- May	18- May	18- May			
Jun-17									
Jul-17									
Aug-17	17- Aug				17- Aug	17- Aug			
Sep-17	29- Sep		29- Sep	29- Sep			29- Sep		
Oct-17									

LOCATION	1	2	3	4	5	6	7	8	9
ENVIRONMENT	Muddy birch tract	Dense conifer stand	Bracken/ birch border	Birch Regeneration	Conifer/ willow	Conifer/ beech border	Open forest	Bracken/ birch border	Open forest
KEY ACTIVITY	FORAGING	COMMUTING	FORAGING	FORAGING/ COMMUTING	WALLOWING	COMMUTING	FORAGING	SCRATCHING/ MARKING	COMMUTING
Nov-17	20- Oct		20- Oct	20- Oct			20- Oct		
Dec-17			16- Dec				16- Dec	16- Dec	16- Dec
Jan-18			05- Jan				05- Jan	05- Jan	05- Jan

**GREEN= FUNCTIONING TRAP**

**RED= CORRUPTED TRAP**

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
					Adult/ Sub- adult/ Juvenile/ Piglet		Foraging/ Commuting/ Comfort/ Vigilance/ Agonistic	Between individuals/ type of interaction	e.g. Scenting air/ Looking/ Grunting		
1	01:00	13/01/17	22:05	1	Adult	1	Foraging		Single loud sniff	Boar walking slowly and scouring ground	<a href="https://www.youtube.com/watch?v=H8-9Yqh55ds">https://www.youtube.com/watch?v=H8-9Yqh55ds</a>
2	02:30	14/01/17	06:38	2	Mixed age group	4+	Foraging	Occasional body contact	Sniffing camera	Some boar scouring the ground, others wary of camera. Some air scenting- vigilance	<a href="https://www.youtube.com/watch?v=a81x00QxFGk">https://www.youtube.com/watch?v=a81x00QxFGk</a>
3	02:00	14/01/17	21:29	2	Adult	1	Vigilance		Sniffing air	Boar sniffing air. Wary of camera. Retreated from camera	<a href="https://www.youtube.com/watch?v=7H4X2bHEYpU">https://www.youtube.com/watch?v=7H4X2bHEYpU</a>
4	00:30	16/01/17	04:47	2	Adult and juvenile	2	Foraging			Juvenile following adult	<a href="https://www.youtube.com/watch?v=Z2T3up-kffA">https://www.youtube.com/watch?v=Z2T3up-kffA</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
5	01:30	16/01/17	19:04	1	Adult	1	Foraging			Boar foraging in soft soil	<a href="https://www.youtube.com/watch?v=DYP04ShRYq4">https://www.youtube.com/watch?v=DYP04ShRYq4</a>
6	02:30	19/01/17	06:47	1	Mixed age group	5	Foraging/ Agonistic	Grunting (fighting off camera?). Nose to body sniffing	Sniffing, Grunting	Group foraging individually in soft mud. One boar rooting	<a href="https://www.youtube.com/watch?v=IEhQfJH10ro">https://www.youtube.com/watch?v=IEhQfJH10ro</a>
7	00:30	20/01/17	21:10	1	Adult	1	Commuting			Boar walking past camera	<a href="https://www.youtube.com/watch?v=jPizZO7wmaU">https://www.youtube.com/watch?v=jPizZO7wmaU</a>
8	01:00	21/01/17	03:59	1	Adult	1 or 2	Commuting			Boar walking past camera	<a href="https://www.youtube.com/watch?v=fFhph5kYNFg">https://www.youtube.com/watch?v=fFhph5kYNFg</a>
9	01:00	21/01/17	22:29	1	Adult	1	Commuting			Boar running past camera (possibly others off screen?)	<a href="https://www.youtube.com/watch?v=8y0FGjTqoU0">https://www.youtube.com/watch?v=8y0FGjTqoU0</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
10	01:00	23/01/17	07:00	2	Mixed age group	5	Foraging		Sniffing camera	Adult boar followed by juveniles. Adult pauses and sniffs camera repeatedly	<a href="https://www.youtube.com/watch?v=Av3RENwnPZw">https://www.youtube.com/watch?v=Av3RENwnPZw</a>
11	03:00	24/01/17	03:38	1	Adults	2	Foraging			Adult slowly foraging soft soil. Another boar's eyes flash in the background	<a href="https://www.youtube.com/watch?v=hhX_eN9TfZE">https://www.youtube.com/watch?v=hhX_eN9TfZE</a>
12	08:00	26/01/17	01:16	1	Adults	3	Foraging			Group digging separately. One boar becomes vigilant and runs off. Other boar become vigilant	<a href="https://www.youtube.com/watch?v=4HtWyzwbYOA">https://www.youtube.com/watch?v=4HtWyzwbYOA</a>
13	00:30	26/01/17	06:10	1	Adults	2	Foraging			Boar walking slowly and scouring ground	<a href="https://www.youtube.com/watch?v=TykrAyxGkt8">https://www.youtube.com/watch?v=TykrAyxGkt8</a>
14	01:00	31/01/17	08:05	2	Adults	2	Foraging			Boar foraging by camera	<a href="https://www.youtube.com/watch?v=q7zafiPvO7M">https://www.youtube.com/watch?v=q7zafiPvO7M</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
15	00:30	31/01/17	08:27	2	Adult	1	Commuting			Boar walking past camera	<a href="https://www.youtube.com/watch?v=AdwlaWKqO8Y">https://www.youtube.com/watch?v=AdwlaWKqO8Y</a>
16	01:00	03/02/17	18:11	3	Adults and piglets	11	Foraging		Sniffing camera	Adults and piglets foraging. One adult sniffs camera then bolts away before stopping and becoming vigilant. Piglets quickly resume foraging	<a href="https://www.youtube.com/watch?v=fAmH-aYjqrI">https://www.youtube.com/watch?v=fAmH-aYjqrI</a>
17	01:30	04/02/17	17:19	3	Adult and piglets	9+	Foraging		Sniffing camera	Adult sniffs camera at start. Piglets foraging	<a href="https://www.youtube.com/watch?v=oRlNY2omzkY">https://www.youtube.com/watch?v=oRlNY2omzkY</a>
18	00:30	05/02/17	09:20	2	Adult	1	Commuting			Boar walks past camera. Briefly stops and is alert before walking off screen	<a href="https://www.youtube.com/watch?v=aJv4eSqaDQ">https://www.youtube.com/watch?v=aJv4eSqaDQ</a>
19	01:00	07/02/17	01:05	1	Adults	2	Foraging		Grunting	Grunts heard before boars appear on screen	<a href="https://www.youtube.com/watch?v=h2Bm4YdJmbA">https://www.youtube.com/watch?v=h2Bm4YdJmbA</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
20	05:30	09/02/17	15:28	3	Adult and piglets	9	Foraging	Piglet rubs chin on another. Adult nudges piglets away whilst rooting	Sniffing	Lots of rooting in soft damp ground. Piglets stay fairly close together and follow adult - 1 piglet gets left behind briefly whilst rooting. Adult walks away with piglets running after. Bird flutters down onto rooted soil	<a href="https://www.youtube.com/watch?v=ZfvJFMvMuyA">https://www.youtube.com/watch?v=ZfvJFMvMuyA</a>
21	05:30	09/02/17	23:16	1	Adult	1	Foraging			Foraging in the dark	<a href="https://www.youtube.com/watch?v=6zofYTU9Ti0">https://www.youtube.com/watch?v=6zofYTU9Ti0</a>
22	01:00	10/02/17	06:03	2	Adult and juveniles	3	Commuting		Sniffing ground	Adult walks past camera shortly followed by juveniles	<a href="https://www.youtube.com/watch?v=d-K2VBUaqPk">https://www.youtube.com/watch?v=d-K2VBUaqPk</a>
23	01:00	11/02/17	09:34	2	Mixed age group?	5 or 6	Commuting			Boar walk past camera in a loose group. 1 scratches/rubs against a tree	<a href="https://www.youtube.com/watch?v=aHMvUUKX4Gw">https://www.youtube.com/watch?v=aHMvUUKX4Gw</a>
24	00:30	12/02/17	02:25	2	Adult	1	Commuting		Sniffing ground	Boar sniffing ground as it walks along	<a href="https://www.youtube.com/watch?v= OkALG05784">https://www.youtube.com/watch?v= OkALG05784</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
25	00:30	12/02/17	21:47	2	Adult	2	Commuting			1 boar walks past camera followed by another while after	<a href="https://www.youtube.com/watch?v=zvOAI24g2dI">https://www.youtube.com/watch?v=zvOAI24g2dI</a>
26	01:00	13/02/17	22:10	2	Adult	1	Foraging			Boar rooting and lifting loose looking vegetation up with nose	<a href="https://www.youtube.com/watch?v=kBB6cxKFHIU">https://www.youtube.com/watch?v=kBB6cxKFHIU</a>
27	01:30	14/02/17	04:21	1	Adult	1	Foraging			Single boar foraging	<a href="https://www.youtube.com/watch?v=AxA2WCL3aOE">https://www.youtube.com/watch?v=AxA2WCL3aOE</a>
28	01:30	14/02/17	08:00	2	Adults	3 or 4	Commuting		Looking at camera. Sniffing branch	Boar walk past camera. 1 freezes and stares at camera for a while	<a href="https://www.youtube.com/watch?v=TWZcqc3TjDA">https://www.youtube.com/watch?v=TWZcqc3TjDA</a>
29	01:00	14/02/17	08:49	2	Adults	2	Commuting		Sniffing ground	Boar walk past camera	<a href="https://www.youtube.com/watch?v=ISwZWSFduCY">https://www.youtube.com/watch?v=ISwZWSFduCY</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
30	01:30	14/02/17	16:35	3	Adult and piglets	9	Foraging		Sniffs camera	Piglets foraging with sow. Rooting and some vigilance from piglets, sow sniffs camera	<a href="https://www.youtube.com/watch?v=p2asP51QDIM">https://www.youtube.com/watch?v=p2asP51QDIM</a>
31	00:30	22/02/17	07:33	2	Adult	1	Commuting/ Vigilance		Sniffs air, looking around	Boar walks past camera, stops and sniffs air then looks around, swishing tail, before walking away	<a href="https://www.youtube.com/watch?v=Kw-xsJW6nn8">https://www.youtube.com/watch?v=Kw-xsJW6nn8</a>
32	03:30	28/02/17	10:00	3	Adult and piglets	9+	Foraging		Piglet stares at camera	Sow and piglets foraging in area of soft mud. Piglets run off after sow	<a href="https://www.youtube.com/watch?v=gzt4dRguRiC">https://www.youtube.com/watch?v=gzt4dRguRiC</a>
33	05:00	02/03/17	23:25	4	Adult and sub-adult?	2	Vigilance/ Foraging/ Agonistic	Fighting? (off screen)	Grunting, looking at camera	Boar grunting and pushing at another offscreen. They then both walk through the area, one stops and looks at the camera before retreating	<a href="https://www.youtube.com/watch?v=OT9wazw73cg">https://www.youtube.com/watch?v=OT9wazw73cg</a>
34	00:30	03/03/17	14:44	4	Adult and piglets	4+	Commuting			Adult and piglets walk past camera - possibly more piglets off camera	<a href="https://www.youtube.com/watch?v=pNI3N5OKYao">https://www.youtube.com/watch?v=pNI3N5OKYao</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
35	00:30	03/03/17	19:00	4	Adult	1	Commuting			Rear of boar disappearing from camera view	<a href="https://www.youtube.com/watch?v=-RfriPE-g88">https://www.youtube.com/watch?v=-RfriPE-g88</a>
36	00:30	05/03/17	04:13	4	Adult	1	Commuting			Boar walking away from camera. Pauses and shakes head rapidly before walking off	<a href="https://www.youtube.com/watch?v=TWKFxWDmt7M">https://www.youtube.com/watch?v=TWKFxWDmt7M</a>
37	00:30	07/03/17	06:44	4	Adult	1	Commuting			Boar walks past camera	<a href="https://www.youtube.com/watch?v=r0N8SrxVKU4">https://www.youtube.com/watch?v=r0N8SrxVKU4</a>
38	00:30	09/03/17	00:15	4	Adult	1	Foraging			The top of a boars back as it forages	<a href="https://www.youtube.com/watch?v=Cpdx1X6hNvM">https://www.youtube.com/watch?v=Cpdx1X6hNvM</a>
39	01:30	09/03/17	06:46	4	Adult	3 or 4	Commuting		Sniffing ground	Boar walking separately, tails curled to the side	<a href="https://www.youtube.com/watch?v=GZjz5a_Gl3w">https://www.youtube.com/watch?v=GZjz5a_Gl3w</a>

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40	02:30	10/03/17	10:03	3	Adult and piglets	4+	Foraging			Adult and piglets foraging close to camera. Another boar appears in the background	<a href="https://www.youtube.com/watch?v=wWu6PC6o6V8">https://www.youtube.com/watch?v=wWu6PC6o6V8</a>
41	00:30	11/03/17	07:29	4	Adult	2	Commuting		Sniffing ground	Boar walking through area - one stops to sniff the ground	<a href="https://www.youtube.com/watch?v=LN4nFaLDB9A">https://www.youtube.com/watch?v=LN4nFaLDB9A</a>
42	04:30	11/03/17	13:28	3	Adults and piglets	8+	Foraging			2 adults and piglets rooting in soft mud. Sow, tail swishing, foraging very close to camera	<a href="https://www.youtube.com/watch?v=hXII-0ZL-Fs">https://www.youtube.com/watch?v=hXII-0ZL-Fs</a>
43	00:30	13/03/17	18:57	3	Adult	1	Commuting		Sniffing ground	Boar walking past camera, sniffs ground a couple of times	<a href="https://www.youtube.com/watch?v=9b40rQCInxg">https://www.youtube.com/watch?v=9b40rQCInxg</a>
44	06:00	14/03/17	18:08	3	Adults and piglets	10	Foraging	Adult sniffs another adult		2 adults and piglets foraging - adults walk off and piglets run after them before returning to the area	<a href="https://www.youtube.com/watch?v=Nhrtrsh3F0sc">https://www.youtube.com/watch?v=Nhrtrsh3F0sc</a>

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45	01:00	15/03/17	18:03	3	Adults and piglets	10	Vigilance	Adult nudging piglets. Nose to nose touching	Looking, sniffing air	Adult and piglets foraging near camera, all become very vigilant and piglets freeze. 2 more adult boar come from background. First adult nudges piglets away	<a href="https://www.youtube.com/watch?v=ygR7gBvcXdl">https://www.youtube.com/watch?v=ygR7gBvcXdl</a>
46	00:30	15/03/17	22:17	3	Adults	2	Commuting		Sniffing ground	Boar walking past camera sniffing ground	<a href="https://www.youtube.com/watch?v=1cfcR1sclqw">https://www.youtube.com/watch?v=1cfcR1sclqw</a>
47	01:30	16/03/17	12:34	3	Adult	1	Foraging			Boar rooting in soft mud, turning ground over with its nose	<a href="https://www.youtube.com/watch?v=UdCEZfStTjI">https://www.youtube.com/watch?v=UdCEZfStTjI</a>
48	03:00	16/03/17	18:38	3	Adult and piglets	7	Foraging		Looking towards camera	Sow and piglets foraging. She pauses and looks towards camera briefly	<a href="https://www.youtube.com/watch?v=RNvUhnabi5E">https://www.youtube.com/watch?v=RNvUhnabi5E</a>
49	07:30	18/03/17	06:27	4	Adult and piglets	8	Foraging	Piglets suckling, playing and mounting each other		Sow and piglets foraging - a couple of the piglets suckle. Piglets playing and climbing on each other. Adult foraging close to camera with just the back seen - tail swishing	<a href="https://www.youtube.com/watch?v=apoZmGs0WY">https://www.youtube.com/watch?v=apoZmGs0WY</a>

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50	09:30	18/03/17	16:10	3	Mixed age group with piglets	14+	Foraging	Piglets try to suckle, piglets sniff and mount each other	Squealing/grunting	2 adults and piglets foraging close to camera - one of the adults knocks/rubs against camera. Later 4 adults/sub-adults and at least 10 piglets of different ages are foraging together - lots of interaction between piglets	<a href="https://www.youtube.com/watch?v=asJTinYgKOA">https://www.youtube.com/watch?v=asJTinYgKOA</a>
51	06:00	19/03/17	16:41	3	Mixed age group with piglets	10+	Foraging	Attempted suckling, piglets play fighting and chin rubbing	Grunts	Mixed group of adults and sub-adults with piglets foraging in the same area - rooting in the soft mud. Birds flying down to the disturbed ground. Piglets play fighting, pushing each other with their heads and rubbing chins on each other	<a href="https://www.youtube.com/watch?v=BaZjmrXMgoA">https://www.youtube.com/watch?v=BaZjmrXMgoA</a>
52	00:30	19/03/17	00:50	3	Adult	1	Commuting		Sniffing ground	Boar walking past camera, nose to ground	<a href="https://www.youtube.com/watch?v=iY3X81dLV-4">https://www.youtube.com/watch?v=iY3X81dLV-4</a>
53	01:30	20/03/17	06:40	3	Adult	1	Vigilance		Looking	Boar walks closely past camera, then stands next to camera looking out, very vigilant. Stands for a while before walking off	<a href="https://www.youtube.com/watch?v=31ELz7Xncc8">https://www.youtube.com/watch?v=31ELz7Xncc8</a>

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54	01:00	20/03/17	08:15	3	Mixed age group with piglets	7+	Commuting/ Foraging			Adult with piglets walking off into distance, followed shortly after by sub-adult/juvenile. Soon after, adult and piglets are rooting close to camera	<a href="https://www.youtube.com/watch?v=7FZoG_at_nU">https://www.youtube.com/watch?v=7FZoG_at_nU</a>
55	02:00	20/03/17	09:49	3	Adults and piglets	6+	Commuting/ Foraging			3 adult boar and at least 3 piglets walking through the area several times, stopping to forage occasionally	<a href="https://www.youtube.com/watch?v=hbnIHki8wS8">https://www.youtube.com/watch?v=hbnIHki8wS8</a>
56	01:00	20/03/17	16:08	3	Adult and piglets	3+	Vigilance		Grunt. Sniffs camera	Sow and piglets foraging - she walks close to camera, grunts and the sniffs the camera before jumping away from it	<a href="https://www.youtube.com/watch?v=yYAgO2Tf4KQ">https://www.youtube.com/watch?v=yYAgO2Tf4KQ</a>
57	00:30	20/03/17	09:24	4	Adult and piglets	7	Commuting/ Foraging			Adult walking through, sniffing ground and foraging occasionally, followed at a distance by piglets	<a href="https://www.youtube.com/watch?v=DqicuoKcy70">https://www.youtube.com/watch?v=DqicuoKcy70</a>
58	19:30	21/03/17	13:54	4	Adults and piglets	12+	Foraging	Piglets mounting/chin rubbing each other	Squeals and grunts	2 adults and at least ten piglets foraging - piglets camouflaged well in long dry grassy area. After 1 adult boar forages very close to camera, squealing and grunting heard off-camera	<a href="https://www.youtube.com/watch?v=80HsgW-5HNU">https://www.youtube.com/watch?v=80HsgW-5HNU</a>

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59	02:00	21/03/17	16:33	3	Adults	3	Foraging/ Commuting			1 boar rooting in grassy area, walks away whilst still foraging and is joined by 2 other boar	<a href="https://www.youtube.com/watch?v=fOPCuDpdXjo">https://www.youtube.com/watch?v=fOPCuDpdXjo</a>
60	02:00	21/03/17	20:00	3	Adult and piglets	3	Commuting/ Vigilance		Sniffs ground, looking	Adult and piglets walking through area, adult stops to look for a while, sniffs ground and walks back the other way	<a href="https://www.youtube.com/watch?v=R2EyRZCSb8I">https://www.youtube.com/watch?v=R2EyRZCSb8I</a>
61	01:30	21/03/17	23:55	3	Adult and piglets	3	Commuting/ Vigilance		Piglet looking	Brief glimpse of adult to side of camera, piglet trotting away from camera, becomes vigilant and looks for a while before running off	<a href="https://www.youtube.com/watch?v=6tASd8DsTcA">https://www.youtube.com/watch?v=6tASd8DsTcA</a>
62	00:30	21/03/17	07:00	3	Adult and piglets	8	Commuting			Adult walking past camera followed by 7 large piglets that are starting to lose their striped coats	<a href="https://www.youtube.com/watch?v=YIxDjTV1Ky4">https://www.youtube.com/watch?v=YIxDjTV1Ky4</a>
63	00:30	23/03/17	11:48	3	Adult	1	Commuting		Sniffs ground	Boar walking away from camera, sniffing ground as it walks	<a href="https://www.youtube.com/watch?v=Pgze6cA52MI">https://www.youtube.com/watch?v=Pgze6cA52MI</a>

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64	00:30	23/03/17	21:27	3	Adult	1	Commuting			Glimpse of boar as it walks past camera	<a href="https://www.youtube.com/watch?v=wGJT8aymJjk">https://www.youtube.com/watch?v=wGJT8aymJjk</a>
65	00:06	23/03/17	10:09	4	Adult	1	?			2 photos of boar close to camera	<a href="https://www.youtube.com/watch?v=KsRh1AtQXdM">https://www.youtube.com/watch?v=KsRh1AtQXdM</a>
66	05:30	25/03/17	11:55	3	Adult and piglets	5	Foraging	Piglet attempting to mount another	Grunts	Sow rooting alone in soft mud. She goes off camera, grunts are heard then she reappears with piglets and another adult. Several birds perching above and flying down to disturbed ground	<a href="https://www.youtube.com/watch?v=33vRp1UyDLE">https://www.youtube.com/watch?v=33vRp1UyDLE</a>
67	02:30	25/03/17	14:32	3	Adults and piglets	10	Foraging/ Commuting			Sow and 4 piglets walking through area foraging. A short while later another adult with 4 piglets walk through along the same path	<a href="https://www.youtube.com/watch?v=LdMt49W66Jk">https://www.youtube.com/watch?v=LdMt49W66Jk</a>
68	00:30	31/03/17	17:13	3	Adult	1	Commuting			Brief glimpse of boar walking off camera	<a href="https://www.youtube.com/watch?v=WT8t5TWokBk">https://www.youtube.com/watch?v=WT8t5TWokBk</a>

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69	00:30	31/03/17	17:05	3	Adults and piglets	8	Commuting			Boar walking in front of camera then adults seen walking away towards a deer in the background	<a href="https://www.youtube.com/watch?v=JTRqqEgvKTI">https://www.youtube.com/watch?v=JTRqqEgvKTI</a>
70	02:30	01/04/17	08:57	3	Adults and piglets	11+	Foraging/ Commuting	Piglet attempts to suckle		2 adults with about 5 piglets rooting in soft mud before walking off. A short distance away another adult with piglets walks through	<a href="https://www.youtube.com/watch?v=wQTH02LucEw">https://www.youtube.com/watch?v=wQTH02LucEw</a>
71	00:30	03/04/17	05:06	3	Adult	1	Commuting			Boar walking away from camera along path	<a href="https://www.youtube.com/watch?v=7iytNLhSfMA">https://www.youtube.com/watch?v=7iytNLhSfMA</a>
72	00:30	10/04/17	17:10	3	Adult and piglets	4	Foraging/ Commuting			Boar foraging briefly before trotting away	<a href="https://www.youtube.com/watch?v=4E0R0SCpOsU">https://www.youtube.com/watch?v=4E0R0SCpOsU</a>
73	00:30	13/04/17	09:25	3	Adult and piglet	2	Commuting			Piglet walks in front of camera, followed a short while after by adult	<a href="https://www.youtube.com/watch?v=RS159DDacro">https://www.youtube.com/watch?v=RS159DDacro</a>

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74	01:00	14/04/17	19:32	3	Adult	1	Foraging			Boar foraging in soft mud	<a href="https://www.youtube.com/watch?v=hS-CjPf1LV4">https://www.youtube.com/watch?v=hS-CjPf1LV4</a>
75	00:30	16/04/17	11:30	3	Piglet	1	?			Single piglet briefly appears on screen before turning and running back off	<a href="https://www.youtube.com/watch?v=zXW3JtQh3Sc">https://www.youtube.com/watch?v=zXW3JtQh3Sc</a>
76	00:15	19/04/17	18:43	4	Adult and piglet	2	Foraging?			Series of 5 photographs, mostly of a piglet with its head down, presumably foraging	<a href="https://www.youtube.com/watch?v=LoLT1a--MDg">https://www.youtube.com/watch?v=LoLT1a--MDg</a>
77	00:03	21/04/17	12:39	4	Piglet	1	?			Photograph of the back and ears of a large piglet	<a href="https://www.youtube.com/watch?v=gN0tI951ui8">https://www.youtube.com/watch?v=gN0tI951ui8</a>
78	00:30	24/04/17	09:06	4	Piglets	2+	Foraging?			Series of 10 photographs of at least 2 piglets, mostly with their heads down	<a href="https://www.youtube.com/watch?v=8dZn5yHg0ME">https://www.youtube.com/watch?v=8dZn5yHg0ME</a>

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79	01:30	24/04/17	11:36	4	Adult and piglets	4	Foraging	Piglets suckling		Series of 30 photographs showing a sow and piglets foraging in a grassy area. Close up pictures of piglets suckling	<a href="https://www.youtube.com/watch?v=0enb0rTNkbM">https://www.youtube.com/watch?v=0enb0rTNkbM</a>
80	00:12	24/04/17	12:55	4	Adult and piglet	2	Foraging?			4 photographs of an adult and piglet close to the camera	<a href="https://www.youtube.com/watch?v=4HgZPiCdXlg">https://www.youtube.com/watch?v=4HgZPiCdXlg</a>
81	00:06	29/04/17	21:55	4	Adult	1	?			2 photos of a boar moving towards the camera	<a href="https://www.youtube.com/watch?v=3cL1PIRaDS8">https://www.youtube.com/watch?v=3cL1PIRaDS8</a>
82	06:30	05/05/17	07:37	4	Adults and piglets	5+	Comfort	Piglets suckling		Long series of photographs showing 2 adults mostly lying down, with piglets suckling	<a href="https://www.youtube.com/watch?v=G9gDzKYdncE">https://www.youtube.com/watch?v=G9gDzKYdncE</a>
83	02:00	18/05/17	16:42	5	Mixed age group with piglets	6 or 7	Foraging	Piglet suckling	Grunts, sniffs camera	Sow walks in front of camera, stops and turns around, grunts then sniffs and nudges camera. She then walks towards wallow with 2 piglets, one of which suckles. More piglets and juveniles forage on the other side of the wallow	<a href="https://www.youtube.com/watch?v=qHHThybrlDk">https://www.youtube.com/watch?v=qHHThybrlDk</a>

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84	03:00	19/05/17	18:42	5	Adults	2	Comfort	Pushing away - dominance/aggression?	Nosing in water, wallowing, grunting, sniffs camera, scratches/rubs body on camera	Boar standing in wallow, pawing and snouting mud at edge. It then urinates into water before scooping water and mud with its nose (scenting?) then lies down in wallow. A second boar enters the wallow, also scooping into the water and mud with its nose, then pushes the first animal away. The second boar then noses and sniffs the camera before scratching/rubbing against the camera, knocking it out of position	<a href="https://www.youtube.com/watch?v=KeC7rhAodYs">https://www.youtube.com/watch?v=KeC7rhAodYs</a>
85	02:00	20/05/17	00:06	5	Adults	3	Foraging/ Commuting/ Comfort		Nosing in water, rolling in wallow, sniffing	Boar wander through wallow area, foraging, scooping water and mud with their noses, one lies briefly in the wallow, one sniffs close to camera	<a href="https://www.youtube.com/watch?v=qDogLkKEgjl">https://www.youtube.com/watch?v=qDogLkKEgjl</a>
86	05:00	20/05/17	14:28	5	Adults and piglets	5+	Comfort/ Foraging/ Agonistic	Piglets play-fighting	Scratching bottom, sniffing ground and air, piglet looking	1 boar scratching its bottom on the camera, second boar walking by wallow sniffing the ground. Piglets sniff and nudge camera before play-fighting, pushing each other with shoulders	<a href="https://www.youtube.com/watch?v=le_XUU-GNDE">https://www.youtube.com/watch?v=le_XUU-GNDE</a>

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87	00:30	26/05/17	06:15	6	Adult and juvenile?	2	Comfort/ Commuting		Rubbing against camera	Pale boar, possibly juvenile, rubs against the camera/tree. Adult boar walks away from camera	<a href="https://www.youtube.com/watch?v=FtRatHXiN7E">https://www.youtube.com/watch?v=FtRatHXiN7E</a>
88	02:00	26/05/17	07:20	5	Adults	2	Comfort/ Commuting/ Vigilance		Sniffing ground, looking, sniffing air, rubbing against camera/tree	Boar walking whilst sniffing ground, hears a sound and looks up, freezes briefly then shakes vigorously before rubbing against the camera tree. A second boar walks into area, pauses to sniff air then walks right up to camera (where first boar is also), sniffing and nudging it with its nose. 1 of the boar then appears with a stick in its mouth, pauses to investigate another stick before walking off	<a href="https://www.youtube.com/watch?v=1iw9dBd9cZE">https://www.youtube.com/watch?v=1iw9dBd9cZE</a>

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89	05:00	26/05/17	13:17	5	Adults and piglets	12	Comfort/ Foraging/ Agonistic	Piglets play-fighting/biting , sows shoulder bump	Wallowing, sniffing camera, scratching bottom in wallow, scratching against camera/tree	Sow sitting in wallow whilst other sows browse nearby. She gets up and walks towards camera, sniffs, then dashes away. Sow returns to wallow and mixed size group of 9 piglets come close, nosing mud and play-fighting. She leaves and other 2 sows come to wallow, scooping in water and mud with their noses before lying down. One boar then scratches against the camera/tree	<a href="https://www.youtube.com/watch?v=oGmdk2iLTF0">https://www.youtube.com/watch?v=oGmdk2iLTF0</a>
90	01:00	26/05/17	16:47	5	Adult	1	Foraging		Sniffing close to camera	Boar foraging near camera, sniffs close to camera	<a href="https://www.youtube.com/watch?v=4ng5B44V3Sg">https://www.youtube.com/watch?v=4ng5B44V3Sg</a>
91	01:00	27/05/17	06:01	5	Adult	1	Foraging/ Commuting		Sniffing close to camera	Boar foraging close to camera before walking away	<a href="https://www.youtube.com/watch?v=ERp9t8VsX6c">https://www.youtube.com/watch?v=ERp9t8VsX6c</a>
92	01:00	29/05/17	10:37	6	Adult and piglets	6+	Foraging/ Vigilance		Sniffing camera	Piglets seem to notice camera as either retreat from it or sniff then run away. Sow then approaches camera, sniffs it and runs off	<a href="https://www.youtube.com/watch?v=N5yvyJei73o">https://www.youtube.com/watch?v=N5yvyJei73o</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
93	02:00	30/05/17	18:47	5	Adult and piglets	4	Comfort/ Foraging	Piglets suckling	Scratching against camera/tree, grunting, sniffing, squealing	Boar (piglet?) scratching against camera/tree. Sow scratches her neck on a tree in front of the camera. A piglet attempts to suckle, lots of squealing and sow moves away. She then lies down, and 3 piglets suckle before all walking off	<a href="https://www.youtube.com/watch?v=dsbfNHn31oI">https://www.youtube.com/watch?v=dsbfNHn31oI</a>
94	10:00	??/05/17	??	1	Adult and piglets	4	Foraging		Sow rubs bottom in mud	Piglets and sow rooting in soft mud and foraging in grassy/fern area	<a href="https://www.youtube.com/watch?v=pzi-C_DQ-1w">https://www.youtube.com/watch?v=pzi-C_DQ-1w</a>
95	08:00	??/05/17	??	1	Adults and piglets	13+	Foraging	Sow throws piglets out of the way with nose	Grunting and squealing, sniffing near camera	Piglets foraging in soft mud, grass and fern area. Adult walks through area and they follow it. Squeals and grunts off camera before a sow appears with more piglets. Sow nudges a piglet firmly moving it out of her way. All animals walk off in the same direction, with another sow and smaller piglets following	<a href="https://www.youtube.com/watch?v=yPYkZFxe78Q">https://www.youtube.com/watch?v=yPYkZFxe78Q</a>
96	03:00	??/05/17	??	1	Adult and piglets	7+	Foraging		Piglet rubs bottom in mud	Piglets and sow rooting in soft mud	<a href="https://www.youtube.com/watch?v=IOLRS0dKjJc">https://www.youtube.com/watch?v=IOLRS0dKjJc</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
97	02:00	10/06/17	09:21	5	Adult and piglets	4	Comfort		Scratching	Adult and piglets scratching against camera and tree in front of camera	<a href="https://www.youtube.com/watch?v=SMzBNhfeQnQ">https://www.youtube.com/watch?v=SMzBNhfeQnQ</a>
98	00:30	13/06/17	07:03	6	Adults	2	Commuting			Boar walk in front of camera	<a href="https://www.youtube.com/watch?v=0F4FdDnFpI0">https://www.youtube.com/watch?v=0F4FdDnFpI0</a>
99	02:00	13/06/17	19:42	5	Adult	1	Comfort/ Foraging		Scratching on camera/tree	Boar off camera scratching against the camera/tree. Walks in front of camera and then forages with head out of shot	<a href="https://www.youtube.com/watch?v=Spi-NHmiGAE">https://www.youtube.com/watch?v=Spi-NHmiGAE</a>
100	01:00	15/06/17	05:32	5	Piglets	5+	Commuting/ Comfort		Sniffing, scratching against camera	Boar seen in distance, walk towards camera and stop to sniff/scratch against it	<a href="https://www.youtube.com/watch?v=Nr0ju3nFKhM">https://www.youtube.com/watch?v=Nr0ju3nFKhM</a>
101	00:30	15/06/17	07:49	6	Adult	1	Commuting			Boar walks past camera	<a href="https://www.youtube.com/watch?v=hOXFvVXWgsw">https://www.youtube.com/watch?v=hOXFvVXWgsw</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
102	05:00	15/06/17	17:36	5	Adult and piglets	4+	Comfort/ Foraging		Sniffing, scratching against camera and tree, grunting	Boar sniffing and scratching against the camera and tree in front. More boar in distance rooting amongst trees	<a href="https://www.youtube.com/watch?v=F40il-gBxDE">https://www.youtube.com/watch?v=F40il-gBxDE</a>
103	00:30	16/06/17	09:18	6	Adult	1	Vigilance/ Commuting		Sniffing camera	Boar sniffs camera before walking off	<a href="https://www.youtube.com/watch?v=VBHxl2FxiMw">https://www.youtube.com/watch?v=VBHxl2FxiMw</a>
104	00:30	18/06/17	20:54	6	Adult	1	Vigilance		Sniffing camera	Boar sniffing around camera	<a href="https://www.youtube.com/watch?v=TcXa7aB23Fg">https://www.youtube.com/watch?v=TcXa7aB23Fg</a>
105	04:00	21/06/17	17:29	5	Adult and piglets	4	Foraging/ Comfort		Grunting, scratching against camera, squealing	Boar foraging amongst the trees. 1 scratches against the camera/tree. Grunts and squeals heard off-camera	<a href="https://www.youtube.com/watch?v=iZdXC2FW0bc">https://www.youtube.com/watch?v=iZdXC2FW0bc</a>
106	01:00	25/06/17	18:50	5	Adult?	1	Comfort		Scratching against camera/tree	Boar mostly off-camera, scratching against the camera/tree	<a href="https://www.youtube.com/watch?v=BjriwqtWEE8">https://www.youtube.com/watch?v=BjriwqtWEE8</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
107	01:00	25/06/17	20:52	6	Mixed age group?	5+	Agonistic	Chasing away	Sniffing ground	Piglet/juvenile foraging or sniffing ground by camera before being scared away by another boar. Several others run past	<a href="https://www.youtube.com/watch?v=jdb2wuDazng">https://www.youtube.com/watch?v=jdb2wuDazng</a>
108	00:15	??/06/17	??	1	Adult	1	Commuting			Boar walking away from camera	<a href="https://www.youtube.com/watch?v=IsCdrKBBBoxQ">https://www.youtube.com/watch?v=IsCdrKBBBoxQ</a>
109	01:15	??/06/17	??	1	Adult	1	Foraging			Male boar rooting in soft ground	<a href="https://www.youtube.com/watch?v=OoaR9PjklVs">https://www.youtube.com/watch?v=OoaR9PjklVs</a>
110	00:30	??/06/17	??	4	Adult	1	Commuting			Boar walks past camera	<a href="https://www.youtube.com/watch?v=-nbiymtvwNA">https://www.youtube.com/watch?v=-nbiymtvwNA</a>
111	00:30	06/07/17	15:33	6	Adult	1	Foraging/ Commuting			Boar briefly forages close to camera whilst walking past	<a href="https://www.youtube.com/watch?v=XD2D6M3P0rc">https://www.youtube.com/watch?v=XD2D6M3P0rc</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
112	01:00	07/07/17	23:03	5	Adult?	1	Comfort		Scratching	Boar scratches against camera/tree	<a href="https://www.youtube.com/watch?v=m0V-Et2qYEA">https://www.youtube.com/watch?v=m0V-Et2qYEA</a>
113	01:00	19/07/17	08:18	5	Adult	1	Commuting			Boar walks past camera	<a href="https://www.youtube.com/watch?v=f7eMyJYgVzY">https://www.youtube.com/watch?v=f7eMyJYgVzY</a>
114	01:00	24/07/17	05:29	4	Adult and juveniles	3	Foraging		Squeals/grunts	Boar rooting	<a href="https://www.youtube.com/watch?v=EGDdP_zUHSw">https://www.youtube.com/watch?v=EGDdP_zUHSw</a>
115	01:00	24/07/17	19:22	5	Adult	1	Comfort/ Commuting		Scratching against tree	Male boar walking away from camera, sniffs tree then rubs/scratches head, shoulders and body against it	<a href="https://www.youtube.com/watch?v=aSRoMdzQFXs">https://www.youtube.com/watch?v=aSRoMdzQFXs</a>
116	01:00	25/07/17	05:57	5	Adult	1	Commuting			Glimpse of boar as it walks past camera	<a href="https://www.youtube.com/watch?v=9rv0TIMBU6Y">https://www.youtube.com/watch?v=9rv0TIMBU6Y</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
117	04:00	25/07/17	17:04	5	Mixed age group	7+	Agonistic	Rubbing chin on back, play-fighting between juveniles, adult headbutting juvenile away, adults fighting	Scratching against tree and camera, looking at and sniffing camera, squealing	Boar run into view; one scratches against camera/tree then lies down. Different sized young boar (juveniles) play-fighting and shoulder barging each other, an adult boar separates them then forcefully headbutts one away. Playfighting continues, one boar approaches camera, sniffs, then scratches against it. Juveniles continue to fight, with some foraging. Adults then fight, pushing each other away with shoulders, biting and squealing	<a href="https://www.youtube.com/watch?v=hx_gagrJtJg">https://www.youtube.com/watch?v=hx_gagrJtJg</a>
118	00:30	25/07/17	18:20	3	Piglets/ juveniles	3	Commuting			Large piglets/juveniles running in front of camera	<a href="https://www.youtube.com/watch?v=wfC5gp2tP6E">https://www.youtube.com/watch?v=wfC5gp2tP6E</a>
119	01:00	26/07/17	14:22	5	Adult and juvenile	2	Foraging/ Vigilance		Grunting, sniffing camera	Boar foraging, sniff around camera	<a href="https://www.youtube.com/watch?v=PpKyrJZUkuA">https://www.youtube.com/watch?v=PpKyrJZUkuA</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
120	01:00	26/07/17	15:07	6	Adult and juveniles	9	Commuting		Squealing	Boar walk in front of camera, a short time later more run past in the same direction	<a href="https://www.youtube.com/watch?v=x9FOB-Aa3K4">https://www.youtube.com/watch?v=x9FOB-Aa3K4</a>
121	01:00	27/07/17	05:15	1	Adult	1	Commuting			Boar walking past camera then away through the trees	<a href="https://www.youtube.com/watch?v=BkaGWW2aS4s">https://www.youtube.com/watch?v=BkaGWW2aS4s</a>
122	01:00	27/07/17	19:18	5	Adult	1	Commuting/ Vigilance		Sniffs air, noses tree branch	Boar walking past whilst sniffing air, noses a leafy branch	<a href="https://www.youtube.com/watch?v=gaUJEMbTsog">https://www.youtube.com/watch?v=gaUJEMbTsog</a>
123	02:00	28/07/17	05:12	5	Adults and juveniles	6	Commuting /Foraging/ Comfort	Nose to nose contact between juveniles	Scratching against tree	Boar passing through area, some foraging, one scratching against tree and another against camera	<a href="https://www.youtube.com/watch?v=XJBCB2hP9a8">https://www.youtube.com/watch?v=XJBCB2hP9a8</a>
124	00:30	28/07/17	05:41	2	Mixed age group	7	Foraging			Sow, juveniles and piglets foraging	<a href="https://www.youtube.com/watch?v=l4sx-2MQLKI">https://www.youtube.com/watch?v=l4sx-2MQLKI</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
125	01:00	31/07/17	05:48	5	Adult?	1	Comfort		Scratching against camera	Boar scratching against the camera	<a href="https://www.youtube.com/watch?v=wwiahABlffk">https://www.youtube.com/watch?v=wwiahABlffk</a>
126	01:00	01/08/17	08:34	6	Adult and juveniles	7+	Commuting/ Foraging		Squeals and grunts, sniffs camera	Sow walks in front of camera followed by juveniles, some pause to forage. Squeals and grunts heard off-camera. Sow sniffs camera and grunts	<a href="https://www.youtube.com/watch?v=UWtW_ID3JnA">https://www.youtube.com/watch?v=UWtW_ID3JnA</a>
127	01:00	02/08/17	06:21	5	Juvenile	1	Commuting			Juvenile walks in front of camera	<a href="https://www.youtube.com/watch?v=mYN526Fa9xk">https://www.youtube.com/watch?v=mYN526Fa9xk</a>
128	00:30	02/08/17	06:42	6	Adult	1	Commuting			Boar walks in front of camera	<a href="https://www.youtube.com/watch?v=V8qERajxLKg">https://www.youtube.com/watch?v=V8qERajxLKg</a>
129	01:30	08/08/17	16:30	6	Adults and piglets	5+	Vigilance/ Comfort	Nose to nose contact	Looking, sniffing ground, grunting	Boar walks away from camera, looks around, sniffs ground then becomes vigilant. 2 other adults then also aware of something and look up. Footage cuts to a sow lying down, sniffed by another adult and then piglets	<a href="https://www.youtube.com/watch?v=iu5gauMRJ9U">https://www.youtube.com/watch?v=iu5gauMRJ9U</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
130	01:00	08/08/17	19:27	6	Mixed age group	4	Commuting/ Vigilance	Piglet shoulder barges/headbutts juvenile	Looking, grunting	Sow walks in front of camera. Piglets and a juvenile appear, piglet runs towards and shoulders/headbutts juvenile. Both pause and are vigilant before piglet walks off and juvenile resumes foraging.	<a href="https://www.youtube.com/watch?v=-OJzYNnZLIs">https://www.youtube.com/watch?v=-OJzYNnZLIs</a>
131	00:30	15/08/17	19:55	6	Adults	2	Commuting			Boar running through area	<a href="https://www.youtube.com/watch?v=d9Ed6ZpxVSk">https://www.youtube.com/watch?v=d9Ed6ZpxVSk</a>
132	00:15	01/10/17	??	4	Adult	1	Commuting			Boar walking past camera	<a href="https://www.youtube.com/watch?v=Voj4c_D9A2w">https://www.youtube.com/watch?v=Voj4c_D9A2w</a>
133	00:15	02/10/17	??	4	Adult	1	Vigilance/ Commuting		Looking	Boar walking through area, pauses and looks at camera then continues with increased vigilance	<a href="https://www.youtube.com/watch?v=ILScrwSk4rw">https://www.youtube.com/watch?v=ILScrwSk4rw</a>
134	00:15	17/12/17	10:50	8	Adult and juveniles	4	Vigilance/ Commuting		Looking	Adult foraging almost off screen, juveniles a short distance away stop to look then run off towards adult	<a href="https://www.youtube.com/watch?v=zlonMVpELQQ">https://www.youtube.com/watch?v=zlonMVpELQQ</a>

VIDEO NO.	LENGTH	DATE	TIME	LOCATION	BOAR	QUANTITY	PRIMARY ACTIVITY	KEY SOCIAL INTERACTIONS	SENSORY EXPERIENCES	DESCRIPTION/ INTERESTING OBSERVATIONS	URL
135	00:30	17/12/17	17:39	8	Adult	1	Commuting/ Vigilance		Looking, sniffing camera	Boar walks towards camera, stops to look then sniffs it. Boar looks around then trots away	<a href="https://www.youtube.com/watch?v=yChd8uG9FY0">https://www.youtube.com/watch?v=yChd8uG9FY0</a>
136	01:15	22/12/17	20:30	8	Adults	3	Comfort/ Vigilance		Rubbing against trees, sniffing camera, looking	Male boar sniffs tree then rubs cheeks and nose on it. 2 more adults come along and also sniff and rub cheeks on trees (scent marking?). 1 sniffs the camera then bolts away, the other becomes vigilant and looks towards it, before continuing to rub against tree	<a href="https://www.youtube.com/watch?v=dZYvLEHSvhY">https://www.youtube.com/watch?v=dZYvLEHSvhY</a>
137	02:00	25/12/17	19:21	8	Adults and sub- adults?	8+	Comfort		Rubbing on ground and tree, sniffing tree, nibbling tree, grunting and squealing	2 sows rubbing their cheeks and sides and back on the ground and trees, nibbling at the trees. More boar come along (sub-adults?), grunting and squealing, and also start sniffing the area and rubbing on trees before some forage	<a href="https://www.youtube.com/watch?v=FsnOsgAyLro">https://www.youtube.com/watch?v=FsnOsgAyLro</a>

## **11.2 Appendix B**

### **EXAMPLE INTERVIEW THEMES**

#### **Forest of Dean**

What is your relationship with the forest?

How would you describe it to other people? (ecologically/culturally/aesthetically)

How has the forest changed during your time here?

What makes the forest 'special' or different, and gives it identity?

Does it feel the forest has changed ecologically?

Has the forest changed culturally/socially?

Is the forest a wild place?

How do you understand the role of the Forestry Commission in the FoD?

What do you think is the focus of their management?

Do you feel boar have changed the way people perceive the forest e.g. positive/negative for tourism etc?

Have wild boar had any impact on local economies e.g. increased/decreased tourism?

#### **Boar**

How would you describe wild boar?

How do you learn or know about boar?

What interactions do boar have with other species? Flowers, plants, insects etc?

What influences boar movements within the forest, and outside of the forest?

Has your feeling, and the public's feeling in general, changed towards their presence?

#### **Experience/Living with**

Can you tell me about the moment you were aware of boar in the forest?

Can you remember your first experiences of boar?

What encounters/experiences have you had?

Do they have a place in the forest?

How do you feel about wild boar being in the British countryside generally?

Why have wild boar done so well in the FoD?

Have boar changed the forest, and the surrounding landscape? In what ways?

E.g. ecologically/socially/culturally?

What are benefits and complications of living with wild boar?

Do you see them as a risky presence?

Have they changed the way you use and interact with the forest?

Does it feel like the presence of boar is more noticeable?

Are they closer to towns than before?

How do you imagine the future regarding boar?

Are there times of year where encounters are more/less likely?

### **Management/Culling**

Do wild boar need to be managed?

What kind of management is required?

Should wild boar be culled?

Are there alternative management methods that might be appropriate?

Do you know the methods employed by the FC to control wild boar?

Why do some people support/oppose the cull?

Who influences and determines management?

Is management transparent? Should it be more open?

Do you think there is any scope, or desire, for more public hunting on public land e.g. commercialised shooting?

Should there be a closed season for wild boar as in places in Europe?

Are you aware of the current wild boar Action Plan? Is it likely to achieve its purpose?

Would changing policy in any way be advantageous?

### **Monitoring**

The last census suggested an increase in wild boar- is this how it feels?

Do you know much about the monitoring approach for wild boar?

Are there alternative methods that could be used?

Does the monitoring relate to management?

Does the monitoring play a role in local debates around boar?

Do you think the numbers of boar suggested by the monitoring are the problem?

### **Representations/Labels**

Do you see them as a native animal?

How do you feel about using terms like pest, invasive, hybrid, feral, wild etc in relation to wild boar?

Does it matter if the boar are pure or hybrid?

The boar are defined as feral- how do you understand this? Do you think it is appropriate?

Will wild boar always be 'feral'?

Are wild boar wild?

Do these labels affect how people see wild boar? Do they affect public understanding of wild boar?

### **Community Engagement/ Local Politics**

Do know whose responsibility it is to manage wild boar?

Can you tell me about the communication between different stakeholders regarding management and living with boar?

Who should decide where wild boar should and shouldn't be?

What is your knowledge of poaching in the forest?

Do local stakeholders and/or members of the public have much say in management strategies? Is this appropriate?

If relationships between stakeholders is bad, what could be done to improve this?

Do you think legislation around boar control/management is appropriate? Would a change be beneficial?

Is there enough education around wild boar and their presence?

What could be done to improve the way humans and wild boar live together, or to manage problems?