



DIE ERDE

Journal of the
Geographical Society
of Berlin

Vol. 155, No. 3-4 · Research article

Bordering Through Biosecurity: Wild Boars and Veterinary Fences in the German-Polish Borderlands

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Manuscript submitted: 23 February 2024 / Accepted for publication: 03 April 2025 / Published online: 23 July 2025

Abstract

This article analyzes how the “risky” mobilities of animals and viruses provoke government reactions that result in bordering processes: From 2020 onwards, German authorities erected hundreds of kilometers of fence along the Eastern border with Poland in response to the spreading of African swine fever (ASF), a highly contagious viral disease that affects both wild boars and domesticated pigs. The government’s main intention behind fencing was to secure the German borderline against the unwanted border crossings of potentially infected wild boars from Poland. At this point in time, the animals were framed as a disease reservoir, while their wayward spatial movements were depicted as a biosecurity threat to the export-dependent German pig sector. Drawing on qualitative fieldwork in the state of Saxony, the article illustrates how government actors employed three techniques seeking to depoliticize the erection of veterinary fences, presenting them as an apolitical matter of concern, while withdrawing them from public scrutiny and contestation: first, re-scaling authority to the sub-national level; second, securitization; and third, disinformation. Yet, adopting a more-than-human approach to the study of borders, the article also points out how a number of human and nonhuman entities forged wayward relations that worked towards a repoliticization of the fences, while counteracting government intentions in the management and control of disease.

Keywords more-than-human geographies, animal health, material borders, critical border studies, nonhuman (im)mobilities, political animal geographies

Fleischmann L. (2024). Bordering through biosecurity: Wild boars and veterinary fences in the German-Polish borderlands. *DIE ERDE*, 155(3/4), 120–132.



<https://doi.org/10.12854/erde-2024-695>

1. Introduction: “It’s not a Swine Fever, it’s a Fencing Fever”

It was in early 2020 when the state government of Saxony erected the first stretches of fence along the Eastern German border with Poland. The main aim of these “wild boar barriers,” as they were officially termed, was to prevent the entry of potentially diseased wild boars from Poland. Back then, the German government depicted the animals’ spatial movements as a major biosecurity threat: African swine fever (ASF), a highly contagious viral animal disease that affects both wild boars and domesticated pigs, had been raging in Eastern European countries for years, while a growing number of cases was registered among wild boars in Western Poland; in ever closer proximity to the border with Germany (Friedrich-Löffler-Institut, 2019). This continuous spread of ASF put increasing pressure on the German authorities so as to protect the biosecurity status of the country as “ASF-free.” Along with zoning¹ and efforts to significantly reduce wild boar populations through increased hunting (see also von Essen et al., 2023), fencing presented a key measure in their disease management practices. From 2020 to 2023, government authorities thus erected an estimated total of more than one thousand kilometers of fences in the Eastern German borderlands—the exact extent of which is hard to estimate when I write this article, since no official numbers are available.

Back then, veterinarians frequently rated ASF as the most threatening global animal disease of the 21st century (Busch et al., 2021) due to the very high mortality rate coupled with the unavailability of an effective vaccine (Friedrich-Löffler-Institut, 2018). In Germany, a net exporting country of pig meat, the possibility of a spillover from wild boar populations to domesticated pigs in factory farms therefore constituted a major risk factor for pig farmers: In case an infected animal was found in their stables, they would have had to kill their entire flock. Eventually, in September 2020, the first case of ASF in a wild boar was found on the German side of the border (Friedrich-Löffler-Institut, 2020). This led to a drastic decrease in pork prices due to the export bans and trade regulations that were implemented by both the EU and international trade partners. In response, the government intensified its fencing policies in the area in an attempt to ostensibly push back the virus to Poland.

This instance of intensive fencing, I would suggest, intersects with a wider trend towards a renewed signif-

icance of national borders within the Schengen area of the European Union (Cresswell, 2020; Nossem, 2020; Radil et al. 2020; Wille & Weber, 2020); while national borders tend to increasingly re-materialize in the form of fences and other physical barriers (see, for instance, Koca, 2019; Murton, 2019; Pallister-Wilkins, 2017). Building from and contributing to works in critical border studies, this article thus draws attention to the particular case of national re-bordering *through biosecurity*: It unravels how veterinary fencing—the erection of material barriers in the name of biosecurity and animal health—intersects with territorial bordering processes. By doing so, it analyzes how the wayward spatial mobilities of nonhumans, such as those of animals and viruses, may provoke government reactions that materialize in spatial confinements, territorializations, and practices of border-making.

The German border fences were not an isolated case of bordering through biosecurity within Europe (see, for instance, Broz & Harrisson, 2025; Harrisson & Eilenberg, 2025; Svendsen, 2021). Rather, from 2018 onwards, several European states either erected fences or published plans to do so, including Denmark, Bulgaria, Poland, France, Germany, and Norway. As one of my interlocutors, a French veterinarian and epidemiologist, depicted the situation in Europe in 2019: “It’s not a swine fever, it’s a fencing fever!” (Interview March 2019). Yet, as I will illustrate in the course of this article, the German biosecurity fences followed their own intrinsic logics, which were contingent on the specific relations emerging between numerous entities in the context of the disease management practices in this particular part of Germany.

Drawing on qualitative fieldwork conducted in the second half of 2021 in the district of Görlitz in the easternmost part of the state of Saxony, I scrutinize how government actors employed three specific techniques seeking to *depoliticize* the erection of fences in the border region, presenting them as an apolitical matter of concern while withdrawing them from public scrutiny and political contestation: first, rescaling the matter to the sub-national level; second, securitization; and third, disinformation. Yet, a number of actors forged wayward relations that contributed to a *repoliticization* of the fences, thus putting them back on the political agenda. This included humans, such as nature conservation organizations, but also nonhumans, such as animals, viruses, or infrastructure in the area, which constantly exceeded and counter-

acted practices of governing and border-making in the context of ASF through the formation of wayward relations. In order to illustrate these points, I present empirical insights derived from participant observations and qualitative interviews with various actors involved in the management of ASF in the German state of Saxony, in particular, in the Landkreis Görlitz, one of the easternmost German districts, which directly borders Poland. My interlocutors included veterinarians, members of regional authorities, politicians, pig farmers, wildlife experts, and hunters.

Conceptually speaking, I make the case for a more-than-human understanding of bordering through biosecurity; one that considers the multiple ways in which animals and viruses shape, respond to, and disrupt practices of border-making and biosecurity. This perspective builds from works in the field of critical border studies that have stressed practices of “border-making” (Brambilla et al., 2015), “acts of bordering” (Andersson, 2014; Newman, 2006; van Houtum & van Naerssen, 2002), or “border work” (Bialasiewicz, 2012; Rumford, 2008). It adds to these works by considering how such practices, in the context of the management and governing of biosecurity, might not necessarily go as planned or as humans had calculated: A range of human and nonhuman actors continuously mix and mingle in the context of disease management practices, thus bringing about unexpected outcomes that counteract the government’s intentions of bordering; outcomes that constantly exceed human control and calculation. Moreover, by outlining how biosecurity measures intersect with and co-produce territorial borders, I contribute to works that have critically looked at efforts to make life safe (see, for instance, Bingham et al., 2008; Dobson et al., 2013; Donaldson, 2008; Enticott, 2008; Mather & Marshall, 2011).

The article is structured in five sections. In the subsequent second section, I scrutinize a more-than-human understanding of bordering through biosecurity. The subsequent third section then explores how governmental actors worked towards the depoliticization of veterinary fences in the German-Polish borderlands through three specific techniques. Section four then illustrates how a number of human and nonhuman actors continued to forge wayward relations, thus working towards a repoliticization of the fences in the border region. I wrap up with a concluding discussion on the agency of nonhumans in bordering processes.

2. Towards a More-Than-Human Understanding of Bordering Through Biosecurity

In human geography, there is a rich strand of literature that critically unravels the social, spatial, and political processes through which biosecurity is produced (see, for instance, Braun, 2013; Dobson et al., 2013; Everts, 2013; Hinchliffe et al., 2016; Ingram, 2013). This debate goes back to the early 2000s, when an outbreak of foot-and-mouth disease in the UK caused a moral panic that led to the mass culling of millions of potentially infected but most often healthy farm animals (Convery et al., 2005; Donaldson & Wood, 2004). In this context, Donaldson and Wood (2004, p. 37) illustrate how the responses to the viral disease built on “spatialized forms of control,” such as the installation of zones with the aim of limiting and controlling spatial movements. Biosecurity practices thus hold an important territorial dimension, as they often (re)produce a clear demarcation between an “inside” that needs to be secured and protected from an “outside” perceived as potentially “risky.” Hinchliffe and Bingham (2008, p. 1535) thus argue that “security here is about differentiating, valuing, promoting and regulating circulations as well as demarcating territories.”

At the bottom of many biosecurity measures is thus a desire to limit and slow down the wayward spatial mobilities of nonhumans, which are framed as risky (Everts, 2013, p. 822; Hinchliffe et al., 2013). The impetus is

largely to “keep out” certain things while allowing others to circulate, whether through a version of the “high-tech” barn door on farms and related sites or through the selective restrictions on the circulation of plants, animals, people, tissues and such like. (Hinchliffe et al. 2013, p. 531)

In many cases, the protection and promotion of cross-border mobilities deemed economically beneficial, such as those of domesticated animals in a highly internationalized meat market, is thus coupled with the simultaneous regulation and immobilization of ostensibly risky movements (see Cresswell, 2014). For instance, biosecurity practices might seek to limit the spatial movements of wild animals that are framed as disease reservoirs: Braun (2007) points out how the wayward mobilities of wild birds became a major target of control and regulation in the context of avian influenza, as he puts it: “Wild birds compose a ‘silent reservoir’ of viruses – a faceless, unseen and unsea-

ble enemy. ... Because birds migrate, they form ‘uncanny’ reservoirs that disperse and move about” (Braun, 2007, p. 18). The mobilities of nonhumans also frequently turn into an object of regulation in the name of biosecurity if species are considered as “alien” or “invasive” and, thus, as economically or ecologically harmful. Practices of invasive species management also often build on a “fixed understanding of space” (Everts, 2015, p. 195), one that aims to separate and protect an ostensibly pure and untouched inside from external threats through hermetically sealed boundaries.

What emerges from this is the central role of border-making in the management of biosecurity (see, for instance, Chuengsatiansup & Limsawart, 2019; Donaldson, 2008; Edwards, 2025; Eilenberg & Harrisson, 2023; Enticott, 2017; Enticott & Ward, 2020; Hinchliffe et al., 2013). Yet, Hinchliffe et al. (2013) illustrate how the impetus to neatly separate ostensibly “healthy” and “diseased” spaces rests on the powerful myth of purified spaces; a myth that is designed to fail since “the permeability of walls is a requirement for life to live, to circulate” (Hinchliffe et al., 2013, p. 535). They thus call for analyzing the manifold relations that underpin infectious diseases and unfold between humans and a range of nonhumans, while co-producing complex borderlands of disease. Efforts to make life safe thus often respond to an unruly (micro)biological world, which continuously refuses to be contained and controlled (see Braun, 2013). Seen from this perspective, disease is the product of a “viral-animal-human co-evolution,” (Leach et al., 2010, p. 374) while measures of disease control produce unintended and unexpected outcomes for both humans and nonhumans.

It is the appraisal of these complex relations that underpin the management of disease and biosecurity, I would argue, that offers potential to further a more-than-human understanding of borders. Such an understanding takes not only into account how territorial borders are constituted through humans and their meaning-making processes, but also how they are shaped through the complex entanglements between different entities (Boyce, 2016; Fleischmann, 2025; Ozguc & Burrige, 2023; Pallister-Wilkins, 2022; Squire, 2014; Sundberg, 2011). By doing so, the case of bordering through biosecurity may contribute to a better understanding of how territorial borders affect and are affected by a range of entities beyond the human, including animals (Pütz & Schlottmann, 2020), viruses and pathogens (Svendsen, 2021), or

technology (Schindel, 2016). Bordering in the name of biosecurity thus not only re-territorializes but also mingles and mixes a range of entities in surprising or new ways, thus bringing about unexpected effects—effects that have not been predicted or fully anticipated by state actors. What emerges from this is that agency in the context of border-making is a “doing-in-relation” (Sundberg, 2011, p. 331), one that unfolds through the complex relations between manifold entities.

Building from a conceptual understanding that regards territorial borders as constantly emerging and as continually being (un)made and (de)stabilized through performative practices (Paasi, 2001, 2009; Parker & Vaughan-Williams, 2009), the remaining empirical part of this article takes into account how entities beyond the human co-constitute territorial borders. Attending to the manifold relations that underpin the spreading of disease, I interrogate how animals, viruses, materials, technologies, infrastructure, vegetation cover, and humans interact in bordering processes: How do different entities relate to each other in ways that shape, exceed, or counteract the governments’ intentions of bordering through biosecurity? In what follows, I thus pay particular attention to the more-than-human relations that underpin practices of bordering through biosecurity in the German borderlands with Poland. This may help to unwrap potentials for moving beyond the focus on discursive representations that has dominated anthropocentric perspectives in border studies, working instead towards a “materialist (re)turn” (Whatmore, 2006) in the study of borders.

3. The Depoliticization of Veterinary Fencing in Eastern Germany

In January 2020, the authorities in Görlitz, the easternmost district of Saxony, received an order from the state government to erect fences in the area under their jurisdiction. One of my interlocutors, a young veterinarian in his 30s who worked for the district’s veterinary office, repeatedly used the expression “peace times” in order to refer to this period when Germany still counted as officially ASF-free (Interview 8 December 2021). He told me how, all of a sudden, he became responsible for implementing the fencing policies on the ground, something that he considered a “pioneering exercise”: Never before had the veterinary office been tasked to do so, which meant

that no previous knowledge of their practical planning and implementation was available (Interview 8 December 2021). For my interlocutor, it turned out to be a challenging and time-consuming endeavor to find the “ideal” trail for the fences. He told me how he had to gain information about the respective terrain, vegetation, and soil; how he had to ask for permission from numerous landholders; how he had to inform neighbors and find adequate personnel to erect the fences on the ground. Due to the pressing sense of urgency that the state government of Saxony conveyed, he felt that he could not perform all of these tasks with sufficient rigor, as he put it: “There was an enormous pressure of time and a lot of spontaneity behind this action to build this huge stretch of fences” (Interview 8 December 2021). Due to the increasing numbers of infected wild boars being found in ever closer proximity on the Polish side of the border, there was an impetus to act as quickly as possible, so as to hermetically seal off the German borderline before “it might be too late.”

Just a couple of weeks earlier, in December 2019, Denmark had finished a resembling wild boar fence along its entire national borderline with Germany (Eilenberg & Harrisson, 2023; Svendsen, 2021). This fence was the outcome of several months of planning and legal preparation preceding its actual implementation: The Danish parliament had authorized the erection of the wild boar fence through a legal act back in June 2018 (Danish Ministry of the Environment and Food, 2020). Although the Danish border fence followed a similar aim to keep out potentially infected wild boars, both the material design of the fences and the circumstances surrounding their practical implementation differed significantly. In the Danish case, a 70-kilometer-long solid fence, mainly coinciding with the actual administrative borderline with Germany, had been dug into the ground for prevention purposes. On the German-Polish border, however, the only option was to erect a more flexible, electric fence that could be easily removed. Moreover, the fence did not coincide with the actual national borderline but had to be placed further inland, in the marshlands of the Neisse; an area that was frequently used for agricultural and recreational purposes, thus involving a considerable number of public and private landholders. Due to flood control measures and the riverine shape of the national borderline, it was legally impermissible to build a permanent fence on the riverbanks of the Neisse due to driftwood that might get caught in the fences. In addition to this, there was a lack of a legal basis for the erection of fences with the aim

of preventing the entry of infectious diseases. As my interlocutors told me: At this point in time, fencing was only legally authorized through existing statutes in the case of an acute outbreak on German territory (Interview 8 December 2022).

Moreover, the Danish wild boar fence had sparked heated and controversial discussions among opponents and supporters, both within the country and internationally, while attracting considerable media attention during the months and years preceding its finalization. As Eilenberg and Harrisson (2023, p. 2) put it: “Building border fences separating EU member states is highly controversial, and in the Danish-German borderland sensitivities over ethnic divisions and national boundaries remain and are seemingly accentuated by the construction of the fence.” Due to the need to implement fences on rather short notice, coupled with the unclear legal situation, the German government had reason to avoid the unfolding of similar discussions and contestations relating to the fences along its borderline with Poland; reactions that might risk complicating or slowing down efforts to prevent the entry of ASF into the country.

My field research indicated how government actors in the specific context of Eastern Germany employed three techniques with which they worked towards the *depoliticization* of biosecurity fencing; that is, its discursive separation from matters relating to the protection of national borders, thus framing the border fences as apolitical. By doing so, I would argue that the German authorities sought to distract public attention away from the fences while emptying them of their controversial political contents. In order to conceptualize this, I draw on Ferguson’s (1994) seminal work on “the anti-politics machine,” in which he outlines how failed development projects in Southern Africa ultimately “de-politicized” questions relating to resource allocation and poverty, thus ending up increasing bureaucratic state power and perpetuating existing inequalities. Taking cue from and adopting Ferguson’s concept for a rather different regional and thematic context, I would argue that the topic of biosecurity served as another “anti-politics machine” that enabled the German government to depoliticize the protection and securitization of its national borderline with Poland. This depoliticization was achieved through at least three techniques: re-scaling authority to the sub-national level, securitization, and disinformation.

Firstly, fencing was not treated as a matter of national concern by the German government but was re-scaled to the level of the federal states. Accordingly, each of the three affected federal states bordering Poland, namely Brandenburg, Mecklenburg-West Pomerania, and Saxony, implemented their own approaches to fencing; each differing in terms of how fencing was practically and administratively handled. I would suggest that this move enabled the German government to discursively separate veterinary fencing from matters relating to the protection and fortification of the national border, a topic that was likely to present a rather contested issue. This was also achieved through the official naming of the electric fences in the marshlands of the Neisse as a “mobile barrier” rather than a border fence (Interview 8 December 2021). With this terminology, I would argue, the authorities sought to distract attention away from the more controversial effects related to the material fortification of the territorial borderline.

Indeed, the topic of fencing on the German border with Poland did not cause much controversial publicity in neither the national nor the international media. This is a striking difference to the Danish case, which was framed as a *national* matter of concern, becoming discussed and enacted through the national parliament; thus attracting considerable opposition and contestation from the very beginning (see also Eilenberg & Harrisson, 2023). The Danish ASF fence also frequently became the target of activist groups as well as of more artistic practices of subversion and criticism. For instance, in February 2020, an activist group removed 22 meters of the fence and relocated elements to central places in Northern German cities, such as the market square in Kiel, aiming to “encourage everyone to think beyond national borders and move across them as if they weren’t there,” while claiming that “we as a society and resisting people cannot let restrictions such as this symbolic fence stand” (Anonymus, 26 February 2020). By contrast, in the case of the German border fences, there were no systematic activist actions seeking to contest or raise critical awareness of the erection of fences on the national borderline. The only form of protest came from local inhabitants who many times felt disturbed by the fences or not adequately informed by the authorities, as my interlocutors in the local government told me. The authorities thus reported numerous moments when stretches of the fence were purposely knocked down or electric generators were stolen. Yet, as members of the responsible district council told me, they

did not record any more systematic forms of contestation surrounding the border fences. I would argue that this was achieved through the discursive separation of the fences from matters relating to the protection and securitization of the national borderline.

Secondly, the German authorities worked towards a depoliticization of the border fences through securitization: They conveyed a sense of emergency and pressing urgency. Veterinarians and agricultural experts had already warned of a potential entry of ASF from Poland months before the state government of Saxony ordered the erection of fences on the German-Polish borderline. Some of my interlocutors, such as regional pig farmers, thus complained about the state government acting unprepared and too slowly in relation to the immediate implementation of biosecurity measures in the German-Polish border region. This is also reflected in how my interlocutor in the responsible veterinary office was commissioned by the state government “all of a sudden” and many times felt overwhelmed and underprepared for the practical task of implementing the fences. The state government of Saxony also conveyed a sense of urgency and emergency through its official website informing about the current situation of ASF in the border region. One of its main features was a detailed map of the cases of diseased wild boars that had been found in the German-Polish border region. It was updated on a daily basis, thus underscoring that government action was urgently needed. As another interlocutor from the responsible district council told me during an interview: “African swine fever, this is a story where there must not be any timely delay; where one has to act quickly” (Interview 9 December 2021), thus further emphasizing the sense of pressing urgency relating to the topic.

This connects with scholarly works outlining how situations that are deemed an “emergency” often legitimize government actions that focus on immediate events while diverting attention away from their causes, thus framing complex problems from a narrow temporal perspective (Calhoun, 2010). This alarmist perspective discourages the assignment of blame and thus “rarely lead[s] to protest movements” (Jasper, 1998, p. 410). As Fassin and Pandolfi (2010, p. 15) argue, framing a situation as an exceptional state of emergency forms

the basis for a government that is at once military and humanitarian, resting on a logic of security and a logic of protection, on a law external to and

superior to law, rooted as it is in the legitimacy of actions aimed at protecting life.

Situations that are framed as emergencies thus legitimize government action that might otherwise be deemed questionable. As Atchison and Pilkinton (2022, p. 3) outline, such moments install “a moral politics of neglect” that enables the state to execute governing practices that work towards the violent erasure of certain nonhumans (see also Kornherr & Pütz, 2022); practices that might otherwise be deemed morally questionable. In the context of ASF, thus, events that are labeled an emergency “can dramatically reconfigure politics, knowledges, practices and power relations and ways of living with wild animals” (Broz et al., 2021, p. 1), while legitimizing the material fortification of territorial borders.

Thirdly, the authorities worked towards a depoliticization of the border fences through disinformation: As my fieldwork indicated, they strategically withheld information on their extent and location from the public. There were neither any maps of the fences in Saxony available online, nor did the state government publish information on the total length or design of the fences. This was also the case with plans for additional fences, which were not shared or discussed publicly; another way of avoiding protest and contestation. Although members of the responsible authorities claimed in interviews that they organized local information campaigns, so as to inform the people living in direct proximity to the fences about their plans, the authorities barely made any information on the fences transparent and accessible to a wider public. For instance, the responsible ministry in the state of Saxony repeatedly refrained from replying to emails and turned down all interview requests in the context of my research project. When I inquired about a recent map of the fences in the area, an employee of the ministry bluntly replied that “The state of the fences is constantly changing. The specific maps are internal, confidential documents that are not intended for distribution” (Field notes, 8 December 2021). This technique of disinformation might also explain why the national media barely reported on the German-Polish border fences; another difference to the Danish case, which presented a frequently discussed topic in the media (see, for instance, Der Spiegel, 2019; Welt, 2020). During academic presentations in the context of my research project, I frequently encountered people who were completely unaware and shocked by the extent of fencing that I had witnessed during my field

research in the Eastern German borderlands. It seems as if the fences only became visible through immediate encounters, when the residents of the border region or tourists in the area felt disturbed or affected by the material barriers during walks or bike trips in what they considered a picturesque recreational area along the border (Field notes, 22 September 2021).

Taken together, I would argue that these governmental techniques of re-scaling, securitization, and disinformation exemplify the government’s intention to depoliticize bordering practices in the name of biosecurity. Yet, the situation did not always go as planned by the German authorities, while their intention to empty the fences of their more controversial contents became counteracted by the wayward relations between a number of (non)humans. In the following section, I will illustrate how actors in the border region mingled in surprising ways and, through their wayward relations and movements, worked towards a repoliticization of the wild boar fences in the German-Polish borderlands.

4. Unexpected More-Than-Human Relations: The Repoliticization of Veterinary Fencing in Eastern Germany

Soon after the first electric fences had been put up in the marshlands of the Neisse, the state government of Saxony ordered the erection of a second line of fences, so as to make the national borderline “double-proof” against potentially infected wild boars from Poland. This time, it had to be a higher and more solid fence, one that was dug into the ground and located a couple of hundred meters further inland. Again, the state government delegated responsibility to the regional veterinary office, although the latter had “argued against” this second line of fencing in the German-Polish borderlands: It did not regard these more solid fences as a necessary and effective tool of disease prevention (Interview 8 December 2021). Moreover, the authorities had to cope with a number of unexpected difficulties in relation to the practical implementation and management of fences in the borderlands. For instance, thick vegetation quickly overgrew the fences in certain areas; heavy rainfalls knocked down stretches of the fence; the infrastructure in the region created unwanted openings through underpasses or roads that were impossible to be sealed. Moreover, humans left gates open, stole the generators of electric fences, or knocked down fences. This resulted in the need for a

costly *fence management*, while the authorities had to recruit additional personnel for the regular check and maintenance of the hundreds of kilometers of fence. Besides these unforeseen imponderables, I came across many instances during my field research when people presented wild boars as extraordinarily clever animals that could easily knock down fences; adapt to new circumstances; find loopholes in fencing lines through the use of tunnels or underpasses; or hide from human sight. For instance, my interlocutor, the veterinarian responsible for planning fences in the border region, recounted how construction workers had witnessed firsthand how wild boars could even easily knock down the more solid fences:

This was the first report, when somebody said that wild boars can cross over a solid fence, because the big boars, they then ... they jumped against the fences three or four times, then the pole bent and the wire ripped apart, and they could easily cross over. (Interview 8 December 2021)

Moreover, despite the fences being fixed to the ground, my interlocutor claimed that wild boars were capable of digging beneath them to find a way through; something that was particularly likely if the fences had been built on sandy soil. By doing so, I would suggest that the boars forged relations that exceeded political control and calculation.

Indeed, while the second fencing line was still under construction in the state of Saxony, the first case of ASF was discovered on German grounds. In September 2020, an infected wild boar carcass was found in the neighboring state of Brandenburg, at a distance of around six kilometers from the Polish border (Friedrich-Löffler-Institut, 2020). As the federal institute for animal health commented: "It is very likely that the virus was introduced by a migrating wild boar" (Friedrich-Löffler-Institut, 2020). From this point onwards, new cases of infected wild boars were discovered on German grounds on a daily basis, while the first in Saxony was registered in late October 2020. There were also a handful of outbreaks of ASF involving domestic pigs, which points to the capacity of the virus to spill over from wild boars to pig farms despite high biosecurity standards. During fieldwork, a veterinarian told me that this might be explained by the potential for contact between wild boars and domesticated pigs on organic farms, which require a free-range area for their animals.

As a consequence of the repeated outbreaks of ASF among domesticated pigs, pork prices hit rock bottom, and German pig farmers faced dramatic income cuts, while top export destinations, such as China, stopped the trade of German pork products (The Pig Site, 2021). During interviews, pig farmers frequently told me about their desperate situation: Due to government restrictions, they were neither able to slaughter nor to sell their piglets and pigs, which led to an accumulation of residual animals in their stables.

The state government of Saxony responded to the continuously moving virus by ordering the erection of ever more fences in the area, desperately aiming to implement a so-called pushback strategy. Each time the virus had been registered in a wild boar carcass on what state authorities designated as the healthy side of the fences, they demanded the installation of another fence further away from the actual borderline with Poland. By the end of the year, my interlocutor in the regional veterinary office bluntly commented that there were so many fences in place that "no more space" existed to build further ones in the district (Interview 8 December 2021). Biosecurity practices thus led to the proliferation of an increasingly complex network of fences in the borderlands rather than to a neat barrier on the administrative borderline (Fleischmann, 2025). This situation, I would argue, illustrates the desperate attempts of government actors to regain control over the situation.

Yet, rather than constituting a symbol of control, this dense network of fences might be read as the outcome of a situation that got increasingly out of hands, while a number of unruly actors continuously mingled in unexpected ways and forged subversive relations. Unable to contain the nonhuman mobilities and wayward ways of relating in the border region, authorities appeared to be always one step behind: Humans, the virus, animals, fences, the weather, vegetation cover, and the infrastructure in the region mingled in unforeseen ways and forged relations that counteracted the government's intentions to implement a hermetically sealed barrier on its borderline with Poland. One of my interlocutors, who worked in the district's disease management unit, consequently summarized the (un)effectiveness of fencing policies:

The very high effort, which had been invested in the erection of fences up to now, surely contributed to a reduced pace of spreading, but stopping ASF completely didn't quite work out. You simply

cannot stop the disease this way. (Interview 9 December 2021)

For instance, wild boars formed alignments with sandy soil by digging a way beneath the fences; or they interacted with the infrastructure in the area by using tunnels and underpasses to cross to the other side of the fences. Moreover, the ASF virus continued to form productive relations with wild boars and other species: As beings-in-relation, viruses need vectors and hosts to replicate their genetic material and to move spatially. Yet, rather than traveling in a linear manner through space, the ability of the virus to “jump” to new places in surprising ways indicates how it forged relations that exceeded human calculation and control. For example, when hunters from areas further away engaged in wild boar hunting and carcass detection activities in the German borderlands, they might have unintentionally transmitted the virus to new places through contaminated hunting gear; a risk that was repeatedly mentioned in conversations with my interlocutors in the area. Veterinarians I talked to also frequently mentioned the risk of raptors transporting infectious body parts that contained the virus across large distances by feeding on deceased wild boar carcasses.

This way, the wayward relations between a number of entities provoked a repoliticization of the veterinary fences in the German-Polish border region: The ability of the virus to mix and mingle—and thus to spread—in the German borderlands drew attention to the slow and ineffective bureaucratic procedures that underpinned the management of disease. During my fieldwork in 2021, I came across many instances of actors involved in the management of ASF complaining about the perceived incompetence of the state government of Saxony; which was frequently depicted as an overly bureaucratic apparatus that governed from afar, from the capital city of Dresden, while being inattentive to and unaware of the local circumstances in the easternmost periphery of Saxony. Many of my interlocutors in the area voiced direct criticisms at the state government in interviews, while considering their orders to erect ever more fences as pointless. For instance, during interviews with members of the regional district council, many times I could sense an implicit or explicit frustration with the state government and its orders. This became even more explicit in my conversations with pig farmers and farmers’ associations in the border region, who also directed their anger and frustration toward the state govern-

ment. They complained about the government’s lack of effective measures for disease management and its inability to come up with solutions or immediate support, while blaming it for the increasingly desperate economic situation in which they found themselves. Additionally, in conversations with the regional hunters, they often complained about what they perceived to be a mushrooming of fences in the borderlands, publicly questioning their effectiveness while pointing to their adverse effects on other wildlife in the area. For instance, this became apparent during my observations at a “wild boar symposium” in the small town of Niesky in September 2021; an event that was organized by the state government of Saxony and sought to bring together hunters from the area so as to inform them about recent developments in the government’s practices of disease management (Field notes, 24 September 2021). During the meeting, many hunters in the audience voiced their anger at the state government and expressed their criticism of the veterinary fences in the area. Through such means, I would argue, the wayward relations forged in the context of ASF put the veterinary fences back on the political agenda, turning them into objects of contestation and critical scrutiny.

Moreover, the veterinary fences in the German-Polish borderlands were put under increasing scrutiny by numerous nature conservation organizations and animal activists in the course of 2021 and 2022, such as Environmental Action Germany (Deutsche Umwelthilfe e.V.), the German Nature and Biodiversity Conservation Union (Nabu), the World Wildlife Fund (WWF) and Peta. These organizations published a number of statements demanding the demolition of the fences and pointing to the harmful effects on other wildlife in the border region, such as deer and wolves, which might get caught in the fences or trapped in fenced-off compartments (see, for instance, Nabu, 2022). During a flooding in the national park Lower Oder Valley in Brandenburg in the year 2022, numerous animals drowned in the floods of the river Oder. They were unable to cross the veterinary fences that had been installed in the area; a situation that led a number of nature conservation groups to file an urgent appeal against the fences at the responsible administrative court (see Wildtierschutz Deutschland e.V., 2022). Moreover, the WWF commissioned a legal opinion on the veterinary fences, which concluded that they were against the law due to a number of reasons that stood in conflict with the existing nature conservation laws in Germany (WWF, 2022). Through such means, na-

ture conservation organizations—along with other human and nonhuman actors in the border region—actively contested the fences in the German-Polish borderlands while working towards their repoliticization.

5. Conclusion

The aim of this article was to illustrate how the management of biosecurity intersects with bordering practices. Drawing on the case of ASF in the Eastern German borderlands, I analyzed how the state government of Saxony erected hundreds of kilometers of fences in the border region with Poland in an increasingly desperate attempt to gain control over the wayward mobility of the virus. This case of bordering is embedded in a wider trend towards a re-materialization of national borders. At around the same time, government actors installed fences aiming to immobilize ostensibly risky mobilities along the national borders of several European states. Yet, those fences that explicitly targeted human forms of migration or, as in the case of the Danish wild boar fence, were discussed on the national scale, frequently received controversial attention from the media, the public, and various activist groups. By contrast, the veterinary fences on the German border with Poland did not lead to any considerable contestation or opposition. This article argued that government actors achieved this through a re-scaling of the fences to the state level; their securitization through a sense of pressing urgency; and the disinformation of the public. Through these strategies, German authorities intended to distract attention away from the veterinary fences while withdrawing them from political contestation and scrutiny.

Yet, despite the government's intentions to depoliticize the fences and to restore the disease-free status of the country, a number of actors mixed and mingled and, by doing so, actively co-constituted bordering processes: Different entities, intentionally or unintentionally, forged relations that actively counteracted and exceeded the government's intentions for bordering through biosecurity. These unexpected relations ultimately contributed to the failure of the authorities to "re-gain control" over the situation while putting the veterinary fences back on the political agenda, turning them into contested matters while co-constituting a complex landscape of (im)mobility in the German borderlands.

This perspective on biosecurity borders as more-than-human assemblages offers potential for critical border studies to work towards a "materialist (re)turn" (Whatmore, 2006) in the study of borders: It invites scholars to develop a richer and more nuanced picture of how borders are (re)produced. Borders do not only gain significance in relation to humans and their intentions of managing, governing, crossing, or subverting borders. Rather, bordering processes forge relations between a range of different entities and thus affect and are affected by nonhumans. Biosecurity borders are co-constituted and put into question through the manifold relations between a range of actors, such as humans, animals, viruses, infrastructure, vegetation cover, soil, and technologies. Seen from this perspective, borders are always doing-in-relations, constantly emerging through complex entanglements.

Notes

¹ Zoning refers to the demarcation of disease control zones with varying degrees of "risk" and corresponding biosecurity measures; an approach that constituted another important pillar in the disease management practices that were put in place in Eastern Germany in the course of the spreading of ASF. The aim of this zoning approach was to contain and eliminate "risky" virus-animal interactions, to restore the health of subpopulations of pigs, and to maintain the export of pig meat and other pig products in line with EU regulations.

Acknowledgements

The research presented in this article was funded through the project of the German Research Foundation (DFG) "Animals, Power and Space: More-than-Human Political Geographies of Animal Health," project number 450048046. The author thanks the two anonymous reviewers for the helpful feedback provided for revision. She also thanks her interlocutors in the Landkreis of Görlitz in Saxony.

References

- Andersson, R. (2014). *Illegality, Inc.: Clandestine migration and the business of bordering Europe*. Oakland: University of California Press.
- Anonymus. (2020, February 26). Activists relocate Denmark-Germany border fence. <https://de.indymedia.org/>

- node/68254
- Atchison, J., & Pilkinton, M. (2022). Abject life and disaster: Opportunity and invasive species governance following the 2019–2020 Australian bushfires. *Political Geography*, 99, 102774
- Bialasiewicz, L. (2012). Off-shoring and out-sourcing the borders of EUrope: Libya and EU border work in the Mediterranean. *Geopolitics*, 17(4), 843–866. <https://doi.org/10.1080/14650045.2012.660579>
- Bingham, N., Enticott, G., & Hinchliffe, S. (2008). Biosecurity: Spaces, practices, and boundaries. *Environment and Planning A*, 40(7), 1528–1533. <https://doi.org/10.1068/a4173>
- Boyce, G. A. (2016). The rugged border: Surveillance, policing and the dynamic materiality of the US/Mexico Frontier. *Environment and Planning D: Society and Space*, 34(2), 245–262. <https://doi.org/10.1177/0263775815611423>
- Brambilla, C., Laine, J., Scott, J. W., & Bocchi, G. (2015). *Border-scaping: Imaginations and practices of border making*. Burlington: Ashgate.
- Braun, B. (2007). Biopolitics and the molecularization of life. *Cultural Geographies*, 14(1), 6–28. <https://doi.org/10.1177/1474474007072817>
- Braun, B. (2013). Power over life. Biosecurity as biopolitics. In A. Dobson, K. Barker, & S. L. Taylor (Eds.), *Biosecurity: The socio-politics of invasive species and infectious diseases* (pp. 45–57). Oxon: Routledge.
- Broz, L., Arregui, A. G., & O'Mahony, K. (2021). Wild boar events and the veterinarianization of multispecies coexistence. *Frontiers in Conservation Science*, 2, 711299.
- Broz, L., & Harrison, A. (2025). A fence in time: Chrono-material ecologies of decay, governance and knowledge. In A. P. Harrison & M. Eilenberg (Eds.), *Fences and Biosecurity* (pp. 37–64). Helsinki University Press. <https://doi.org/10.33134/HUP-30-2>
- Busch, F., Haumont, C., Penrith, M.-L., Laddomada, A., Dietze, K., Globig, A., . . . Depner, K. (2021). Evidence-based African swine fever policies: Do we address virus and host adequately? *Frontiers in Veterinary Science*, 8. <https://doi.org/10.3389/fvets.2021.637487>
- Calhoun, C. (2010). The idea of emergency: Humanitarian action and global (dis)order. In D. Fassin & M. Pandolfi (Eds.), *Contemporary states of emergency: The politics of military and humanitarian interventions* (pp. 29–58). New York: Zone Books.
- Chuengsatiansup, K., & Limsawart, W. (2019). Tuberculosis in the borderlands: Migrants, microbes and more-than-human borders. *Palgrave Communications*, 5(1), 1–10. <https://doi.org/10.1057/s41599-019-0239-4>
- Convery, I., Bailey, C., Mort, M., & Baxter, J. (2005). Death in the wrong place? Emotional geographies of the UK 2001 foot and mouth disease epidemic. *Journal of Rural Studies*, 21(1), 99–109.
- Cresswell, T. (2014). Mobilities III: Moving on. *Progress in Human Geography*, 38(5), 712–721. <https://doi.org/10.1177/0309132514530316>
- Cresswell, T. (2020). Valuing mobility in a post COVID-19 world. *Mobilities*, 16, 51–65. <https://doi.org/10.1080/17450101.2020.1863550>
- Danish Ministry of the Environment and Food. (2020). *Border fence construction between Denmark and Germany - Report by the Government*. <https://rm.coe.int/files30e-2020-denmark-border-fence-denmark-germany-govt-report/16809ce9eb>
- Der Spiegel. (2019, January 28). Dänemark baut Wildschweinzaun an deutscher Grenze [Denmark builds wild boar fences on its border with Germany]. <https://www.spiegel.de/wissenschaft/medizin/daenemark-baut-wildschweinzaun-schutz-vor-afrikanischer-schweinepest-a-1250291.html>
- Dobson, A., Barker, K., & Taylor, S. L. (2013). *Biosecurity: The socio-politics of invasive species and infectious diseases*. Oxon: Routledge.
- Donaldson, A. (2008). Biosecurity after the event: Risk politics and animal disease. *Environment and Planning A*, 40(7), 1552–1567. <https://doi.org/10.1068/a4056>
- Donaldson, A., & Wood, D. (2004). Surveilling strange materialities: Categorisation in the evolving geographies of FMD biosecurity. *Environment and Planning D: Society and Space*, 22(3), 373–391. <https://doi.org/10.1068/d334t>
- Edwards, S. (2025). Farm borders and biosecurity bordering: Securing livestock identities in Aotearoa New Zealand. *Environment and Planning E: Nature and Space*, 8(3), 1132–1152. <https://doi.org/10.1177/25148486251337285>
- Eilenberg, M., & Harrison, A. P. (2023). Fencing, biosecurity and wild boar politics in the Danish-German borderland. *Journal of Borderlands Studies*, 1–19.
- Enticott, G. (2008). The spaces of biosecurity: Prescribing and negotiating solutions to bovine tuberculosis. *Environment and Planning A*, 40(7), 1568–1582. <https://doi.org/10.1068/a40304>
- Enticott, G. (2017). Navigating veterinary borderlands: 'Heiferlumps', epidemiological boundaries and the control of animal disease in New Zealand. *Transactions of the Institute of British Geographers*, 42(2), 153–165. <https://doi.org/10.1111/tran.12155>
- Enticott, G., & Ward, K. (2020). Mapping careful epidemiology: Spatialities, materialities, and subjectivities in the management of animal disease. *The Geographical Journal*, 186(3). <https://doi.org/10.1111/geoj.12341>
- Everts, J. (2013). Announcing swine flu and the interpretation of pandemic anxiety. *Antipode*, 45(4), 809–825. <https://doi.org/10.1111/j.1467-8330.2012.01021.x>
- Everts, J. (2015). Invasive life, communities of practice, and

- communities of fate. *Geografiska Annaler: Series B, Human Geography*, 97(2), 195–208. <https://doi.org/10.1111/geob.12074>
- Fassin, D., & Pandolfi, M. (2010). Introduction: Military and humanitarian government in the age of intervention. In D. Fassin & M. Pandolfi (Eds.), *Contemporary states of emergency: The politics of military and humanitarian interventions* (pp. 9–28). New York: Zone Books.
- Ferguson, J. (1994). *The anti-politics machine: "Development," depoliticization, and bureaucratic power in Lesotho*. University of Minnesota Press.
- Fleischmann, L. (2025). Veterinary fencing in Eastern Germany: The more-than-human borderlands of African swine fever. In A. P. Harrison & M. Eilenberg (Eds.), *Fences and Biosecurity* (pp. 65–93). Helsinki University Press. <https://doi.org/10.33134/HUP-30-3>
- Friedrich-Löffler-Institut. (2020, October 9). First case of African swine fever in wild boar in Germany. <https://www.fli.de/en/news/short-messages/short-message/first-case-of-african-swine-fever-in-wild-boar-in-germany/>
- Friedrich-Löffler-Institut. (2019, November 18). Polen: Afrikanische Schweinepest rückt näher an deutsche Grenze [Poland: African swine fever moves closer to German border]. <https://www.fli.de/de/aktuelles/kurznachrichten/neues-einzelansicht/polen-afrikanische-schweinepest-rueckt-naeher-an-deutsche-grenze/>
- Friedrich-Löffler-Institut. (2018). FAQ - Afrikanische Schweinepest bei Wildschweinen [FAQ - African swine fever with wild boars]. https://www.openagrar.de/servlets/MCRFileNodeServlet/openagrar_derivate_00009612/FLI-Information_FAQ_ASP20180115.pdf
- Harrison, A. P., & Eilenberg, M. (2025). *Fences and biosecurity: The politics of governing unruly nature*. Helsinki University Press.
- Hinchliffe, S., Allen, J., Lavau, S., Bingham, N., & Carter, S. (2013). Biosecurity and the topologies of infected life: From borderlines to borderlands. *Transactions of the Institute of British Geographers*, 38(4), 531–543. <https://doi.org/10.1111/j.1475-5661.2012.00538.x>
- Hinchliffe, S., & Bingham, N. (2008). Securing life: The emerging practices of biosecurity. *Environment and Planning A: Economy and Space*, 40(7), 1534–1551. <https://doi.org/10.1068/a4054>
- Hinchliffe, S., Bingham, N., Allen, J., & Carter, S. (2016). *Pathological lives: Disease, space and biopolitics*. Chichester: John Wiley and Sons.
- Ingram, A. (2013). Viral geopolitics - biosecurity and global health governance. In A. Dobson, K. Barker, & S. L. Taylor (Eds.), *Biosecurity: The socio-politics of invasive species and infectious diseases* (pp. 137–150). Oxon: Routledge.
- Jasper, J. M. (1998). The emotions of protest: Affective and reactive emotions in and around social movements. *Sociological Forum*, 13(3), 397–424. <https://doi.org/10.1023/A:1022175308081>
- Koca, B. T. (2019). Bordering practices across Europe: The rise of “walls” and “fences”. *Migration Letters*, 16(2), 183–194.
- Kornherr, E., & Pütz, R. (2022). Othering, governing, and resistance of abject urban animals: Egyptian geese and their right to the city. *Political Geography*, 99, 102775.
- Leach, M., Scoones, I., & Stirling, A. (2010). Governing epidemics in an age of complexity: Narratives, politics and pathways to sustainability. *Global Environmental Change*, 20(3), 369–377. <https://doi.org/10.1016/j.gloenvcha.2009.11.008>
- Mather, C., & Marshall, A. (2011). Biosecurity's unruly spaces. *The Geographical Journal*, 177(4), 300–310. <https://doi.org/10.1111/j.1475-4959.2010.00392.x>
- Murton, G. (2019). Facing the fence: The production and performance of a Himalayan border in global contexts. *Political Geography*, 72, 31–42. <https://doi.org/10.1016/j.polgeo.2019.03.001>
- Nabu. (2022). Standpunkt Afrikanische Schweinepest, Aktuelle Erkenntnisse, Schlussfolgerungen und Forderungen [Position on African swine fever, recent findings, conclusions and demands]. <https://www.nabu.de/imperia/md/content/nabude/landwirtschaft/220818-nabustandpunkt-afrikanische-schweinepest.pdf>
- Newman, D. (2006). Borders and bordering: Towards an interdisciplinary dialogue. *European Journal of Social Theory*, 9(2), 171–186. <https://doi.org/10.1177/1368431006063331>
- Nossem, E. (2020). The pandemic of nationalism and the nationalism of pandemics. *UniGR-CBS Working Paper*, 8. <https://doi.org/10.25353/ubtr-xxxx-1073-4da7>
- Ozguç, U., & Burridge, A. (2023). More-than-human borders: A new research agenda for posthuman conversations in border studies. *Geopolitics*, 28(2), 471–489.
- Paasi, A. (2001). Europe as a social process and discourse: Considerations of place, boundaries and identity. *European Urban and Regional Studies*, 8(1), 7–28. <https://doi.org/10.1177/096977640100800102>
- Paasi, A. (2009). Bounded spaces in a ‘borderless world’: Border studies, power and the anatomy of territory. *Journal of Power*, 2(2), 213–234. <https://doi.org/10.1080/17540290903064275>
- Pallister-Wilkins, P. (2017). The tensions of the Ceuta and Melilla border fences. In *EurAfrican borders and migration management* (pp. 63–81). Springer.
- Pallister-Wilkins, P. (2022). Whitescapes. A posthumanist political ecology of Alpine migrant (im) mobility. *Political Geography*, 92, 102517.

- Parker, N., & Vaughan-Williams, N. (2009). Lines in the sand? Towards an agenda for critical border studies. *Geopolitics*, 14(3), 582–587. <https://doi.org/10.1080/14650040903081297>
- Pütz, R., & Schlottmann, A. (2020). Contested conservation-neglected corporeality: The case of the Namib wild horses. *Geographica Helvetica*, 75(2), 93–106.
- Radil, S. M., Castan Pinos, J., & Ptak, T. (2020). Borders resurgent: Towards a post-covid-19 global border regime? *Space and Polity*, 1–9. <https://doi.org/10.1080/13562576.2020.1773254>
- Rumford, C. (2008). Introduction: Citizens and borderwork in Europe. *Space and Polity*, 12(1), 1–12. <https://doi.org/10.1080/13562570801969333>
- Schindel, E. (2016). Bare life at the European borders. Entanglements of technology, society and nature. *Journal of Borderlands Studies*, 31(2), 219–234. <https://doi.org/10.1080/08865655.2016.1174604>
- Squire, V. (2014). Desert 'trash': Posthumanism, border struggles, and humanitarian politics. *Political Geography*, 39, 11–21. <https://doi.org/10.1016/j.polgeo.2013.12.003>
- Sundberg, J. (2011). Diabolic caminos in the desert and cat fights on the Rio: A posthumanist political ecology of boundary enforcement in the United States-Mexico Borderlands. *Annals of the American Association of Geographers*, 101(2), 318–336. <https://doi.org/10.1080/00045608.2010.538323>
- Svendsen, M. N. (2021). Pigs, people and politics: The (re) drawing of Denmark's biological, politico-geographical, and genomic 'borders'. *BioSocieties*, 1–19.
- The Pig Site. (2021, January 16). Germany needs new pig farming strategy to counter low prices. <https://www.thepigsite.com/news/2021/09/germany-needs-new-pig-farming-strategy-to-counter-low-prices>
- van Houtum, H., & van Naerssen, T. (2002). Bordering, ordering and othering. *Tijdschrift voor Economische en Sociale Geografie*, 93(2), 125–136. <https://doi.org/10.1111/1467-9663.00189>
- von Essen, E., O'Mahony, K., Szczygielska, M., Gieser, T., Vaté, V., Arregui, A., & Broz, L. (2023). The many boar identities: Understanding difference and change in the geographies of European wild boar management. *Journal of Environmental Planning and Management*, 1–23. <https://doi.org/10.1080/09640568.2023.2269312>
- Welt. (2020, September 23). Jagd und Wildschweinzaun: Kaum noch Schwarzwild in Dänemark [Hunting and wild boar fence: Almost no wild boars left in Denmark]. <https://www.welt.de/regionales/hamburg/article216347046/Jagd-und-Wildschweinzaun-Kaum-noch-Schwarzwild-in-Daenemark.html>
- Whatmore, S. (2006). Materialist returns: Practising cultural geography in and for a more-than-human world. *Cultural Geographies*, 13(4), 600–609. <https://doi.org/10.1191/1474474006cgj377oa>
- Wildtierschutz Deutschland e.V. (2022, February 8). Einstweilige Verfügung: ASP-Zaun im Nationalpark vor Gericht [Restraining order: ASF-fence in national park at court]. <https://www.wildtierschutz-deutschland.de/single-post/asp-zaun-unteres-odertal-vor-gericht>
- Wille, C., & Weber, F. (2020). Analysing border geographies in times of COVID-19. Wille, C., & Weber, F. (2020). Analysing border geographies in times of COVID-19. In G. Mein & J. Pause (Eds.), *Self and society in the corona crisis. Perspectives from the humanities and social sciences* (pp. 361–385). Esch-sur-Alzette: Melusina Press. <https://doi.org/10.26298/phs9-t618>
- WWF. (2022, April 29). Schweinezaun rechtswidrig errichtet [Boar fence erected unlawfully]. <https://www.wwf.de/2022/april/schweinezaun-rechtswidrig-errichtet>