

Placing animals in the Plantationocene: The plantation after/lives of nutria in Eastern Germany

EPE: Nature and Space

2024, Vol. 7(4) 1482–1503

© The Author(s) 2024



Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/25148486241256547

journals.sagepub.com/home/ene**Lukas Adolphi**

Department of Geography, Catholic University Eichstätt-Ingolstadt, Eichstätt, Germany

Larissa Fleischmann

Institute of Geosciences and Geography, Martin Luther University Halle-Wittenberg, Halle, Germany

Abstract

Nutria (*Myocastor coypus*), also known as coypu or ‘river rats’, are big semi-aquatic rodents that originate from South America and were shipped to Europe for fur production in the late 1800s. Today, the animals live in wild populations in many places around the globe. One of these places is the Eastern German city of Halle is where they have been able to establish themselves in large populations along the river Saale. This article situates the history and presence of nutria in Eastern Germany in the Plantationocene. The Plantationocene concept regards the plantation as a structuring feature of our present. In the plantation, humans and nonhumans are separated, hierarchically ordered and exploited along different power axes, so that standardised, scalable production becomes possible. In this sense, we argue that the nutria farms of the German Democratic Republic (GDR) followed plantation logics that resembled that of ‘actual’ plantations and that exploited their forced animal labour for fur production. With German reunification, however, nutria lost their economic value and, in many cases, were simply released to save on ‘disposal costs’. Outside the nutria farms, they developed plantation afterlives, where similar logics continued to exert violence on their bodies, such as in their recent classification as ‘invasive alien species’, but were also challenged in a number of ways. Taking cue from recent discussions on the Plantationocene, this article can be considered as an intervention and invitation to move beyond the plantation in the literal sense of the term, so as to study how the Plantationocene works across different species, spaces and times, while being attentive to its limitations.

Corresponding author:

Lukas Adolphi, Department of Geography, Catholic University Eichstätt-Ingolstadt, Ostenstraße 18, 85072 Eichstätt, Germany.

Email: lukas.adolphi@ku.de

Keywords

Animals, Anthropocene, capitalist natures, geography, wildlife management

Introduction

Nutria (*Myocastor coypus*), also known as coypu or 'river rats', are big semi-aquatic rodents that originate from South America and were shipped to Europe for fur production in the late 1800s (Evans, 1970). Today, the animals form wild populations in different ecosystems beyond their former habitats (Carter and Leonard, 2002). As a semi-aquatic species, they are good swimmers and spend most time in the water. Nutria are often described as "a fusion of beavers and giant rats" (Mitteldeutsche Zeitung, 13/01/22) that are "armed with large, beaver-like orange teeth" (CBS News, 31/12/2022). In 2016, the European Union responded to their increasing numbers by listing them as one of a total of 88 "invasive alien species of Union concern" (EU, 31/7/2016: 6). This legal classification has turned them into a popular target of strategies of population control and management, such as systematic killing and trapping. Nutria are not only framed as a 'problem animal' in Europe but also in other places around the world, such as in the U.S. (CBS News, 31/12/2022) or Japan (The Japan Times, 21/6/2022), where similar discussions about their invasiveness and harmful effects on ecosystems prevail, although the specific sense-making processes might differ from the European case. Due to their high level of adaptability and their ability to survive cold winters but also to cope with warmer temperatures, nutria have thus successfully settled around the globe.

One of the places, where nutria have become thriving urban dwellers, is the Eastern German city of Halle, where they can be found in different places along the Saale river. During the socialist regime of the German Democratic Republic (GDR), nutria were frequently bred in fur farms in the surrounding areas. With German reunification in 1990, however, most fur farms closed down and nutria lost their economic value. In many cases, they were simply released to save on 'disposal costs'. This article places the history and presence of the nutria in Eastern Germany in the Plantationocene. This conceptual framework regards the plantation as the central structuring feature of the present (Barua, 2023; Haraway, 2015; Haraway et al., 2016). In the plantation, humans and nonhumans are separated, hierarchically ordered and exploited along colonial, racist, patriarchal, anthropocentric and capitalist power axes, so that standardised, scalable production becomes possible (Wolford, 2021). With our case study, we analyse how the nutria farms of the GDR followed plantation logics that resembled that of 'actual' plantations. Moreover, we illustrate how, after the breakdown of the GDR and the closing of fur production, these plantation-like nutria farms developed afterlives, where plantation logics continued in different shapes, such as in the more recent classification of nutria as 'invasive'. Taking cue from a number of inspiring works that have worked with and fruitfully applied the Plantationocene concept to a range of different empirical examples and regional settings (see for instance Barua, 2023; Chao, 2021; Chao et al., 2023; Ofstehage, 2023; Overstreet 2019; Paredes et al., 2023; Stock, 2023; Strange, 2023; Wolford, 2021), our aim is to push the discussion further in at least three ways.

First, we suggest including animals more explicitly in considerations on the workings of the Plantationocene. Drawing on the case of the nutria in Eastern Germany, we discuss the potentials of the concept to explain the violent relationships with animals, which used to be or continue to be exploited as lively capital. Although Haraway herself regards industrial chicken farming as a plantation system (Haraway et al., 2019: 8), scholars have most often applied the concept to agricultural plantations in a more literal sense of the word, such as crop farms in tropical contexts, thus focusing on human-plant relationships and "vegetal geographies" (Barua, 2023). This article elaborates whether the Plantationocene also provides a useful framework for analyzing how animals are

subjected to production systems that follow logics similar to that of 'actual' plantations. Placing animals more explicitly in the Plantationocene, we suggest, might contribute to a more nuanced understanding of the role of human-animal relationships in exploitative production systems.

Second, we elaborate whether the Plantationocene might also present a useful theoretical framework for explaining human-nonhuman relationships in other places and regions beyond the (post-) colonial contexts, in which the concept had originally been applied. With our case study of the former GDR, we take the concept to a rather unusual regional setting, investigating how plantation-like systems emerge and materialise in a (post-)socialist context of Central and Eastern Europe (Chelcea, 2023; Ringel, 2022). In this way, we aim to take the Plantationocene seriously as a globalised phenomenon that unfolds across different social, political and historical settings.

Third, our aim for this article is to discuss the limitations of the concept of the Plantationocene by taking into account possibilities to exceed or counteract plantation logics. As scholars have pointed out, nonhumans frequently refuse to remain the passive objects of standardization and economic exploitation, exceeding attempts to discipline and manage their existence (Gillespie, 2016; Johnston, 2021a, 2021b; Kornherr and Pütz, 2022; Wadiwel, 2018). In this context, we draw on works that highlight the legacies and afterlives of plantations (Peano et al., 2023), i.e., the (dis)continuities that structure social and ecological relationships after the 'actual' plantations have ceased production. In many cases, plantations do not simply disappear but remain "a haunting past that permeates present eco-material and social relations" (Peano et al., 2023: 12). Such plantation after/lives also give way to alternative modes of relating that might oppose and challenge plantation logics (cf. Paredes, 2023: 858). As Moore et al. (2019, no page number) have strikingly asked: "What alternative modes of flourishing arise in the legacies of plantation worlds?". Following up on this, we pay particular attention to how nutria might be "transgressiv" (Philo, 1995) of plantation logics in a number of ways and how they inhabit "unruly edges" (Tsing, 2012), from which they expose and exceed the violent workings of the Plantationocene in the after/lives of the plantation.

Taken together, this article can be considered as an intervention and invitation to move beyond the plantation in the literal sense of the term, so as to study how the Plantationocene works across different species, spaces and times, while being attentive to its limitations. We draw on qualitative fieldwork on the current and past status of nutria in Eastern Germany, focusing on the city of Halle. In the course of 2022, the first author of this article conducted ten semi-structured interviews with inhabitants of the city, local politicians, scientists, wildlife and water conservation agencies, animal welfare organizations, hunters, and former nutria breeders. In addition, he carried out multisensory observations of nutria in Halle over a period of three weeks (cf. Kirksey and Helmreich, 2010). Inspired by Hartigan Jr.'s (2017) attempt to approach plants as ethnographic subjects, the first author visited the nutria daily at different times of the day, described their behaviour, sounds and smells in his notes, and observed their encounters and interactions with humans, other animals and plants (Hartigan Jr, 2017: 255; Whitely, 2008). Sitting on the riverbank and observing nutria, he aimed to practice inter-patience as an "action of allowing things to happen" (Canda, 2010: 249). In this context, the first author also started short conversations with humans who recognisably interacted with the nutria during his observations. In addition, he carried out archival research on historical documents related to fur farming and nutria breeding during and before GDR times.

This article is structured in six sections. We start by scrutinizing the debate on the concept of the Plantationocene and the creative ways in which scholars have worked with and sought to rethink plantations creatively, while pointing out potential future avenues for empirical research on plantation systems. In section three, drawing on a qualitative interview with a former nutria breeder as well as historical sources, we situate the history of the nutria in the socialist context of the GDR, arguing that nutria were deeply intertwined with the economic and political conditions of

the former regime. In section four and five, we then discuss the ongoing presence of nutria in Halle as plantation after/lives, examining both the continuities of plantation logics as well as potential discontinuities and ruptures. We wrap up with a short conclusion in section six.

Expanding the more-than-human geographies of the Plantationocene

The idea of the Plantationocene was first introduced as an alternative approach for attempts to label our current epoch as "Anthropocene" (Crutzen, 2006). In a conversation at Aarhus University, Donna Haraway, Anna Tsing and others collectively generated the term so as to direct attention to the "devastating transformation of diverse kinds of human-tended farms, pastures, and forests into extractive and enclosed plantations, relying on slave labour and other forms of exploited, alienated, and usually spatially transported labor" (Haraway, 2015: 162). The participants thus proposed plantations as useful figures for empirically investigating the profit-driven relationships with nature that underpin modern world relations (Haraway et al., 2016).

Since then, scholars in human geography, anthropology and related disciplines have fruitfully situated the Plantationocene in different postcolonial settings and specific historical contexts, thus contributing to a more complex understanding of the term (Barua, 2023; Chao, 2021; Davis et al., 2019; Paredes, 2023; Stock, 2023; Wang and Xu, 2022). Yet, while the discussion of the Plantationocene as an analytical concept is relatively recent, it converses with and builds on a rich body of work that had previously engaged with plantations across a range of different fields and disciplines (cf. Chao et al., 2023: 6). For instance, critical agrarian scholars had long investigated the destructive effects of large-scale industrial monocultures (Afrizal, 2015; Brass and Bernstein, 1992). Works from the field of Black geographies (Davis et al., 2019; McKittrick, 2011, 2013; Woods, 2007) and earlier Caribbean studies (Beckford, 1972; Mintz, 1989; Williams, 1944; Wynter, 1971) had highlighted how racist forms of violence structured historical plantation societies, while pointing at their enduring effects across the Atlantic.

Most strikingly and perhaps most influential in paving the way for the idea of the Plantationocene, McKittrick (2011, 2013) had scrutinised how contemporary forms of white supremacy and racial oppression in the Americas became historically normalised through plantation systems that built on the enslavement of black people and racial forms of violence. She argues that "plantation logics" continue to operate in a number of ways and institutions, such as in American prisons, universities or cities (McKittrick, 2013: 3). From her perspective, "contemporary prisons mimic the plantation", while prisons function as the 'logical extensions' of plantations (McKittrick, 2011; 955). In response to McKittrick's creative intervention, scholars have investigated how plantation logics unfold and persist in different sites and through different institutions, such as in cityscapes (Strange, 2023; Woods, 2007), legislation (Bergner, 2019) or in plantation infrastructures such as roads, irrigation systems and settlements (Li, 2018). They have thus pointed out how plantations develop afterlives and how plantation legacies unfold (Jegathesan, 2021; McInnis, 2019; Moore et al., 2019; Peano et al., 2023; Thomas, 2019).

Building on but also departing from earlier works that had sought to rethink the plantation creatively, we understand Haraway et al.'s (2016) idea of the Plantationocene as an invitation to push the discussion on plantations even further: Many works on plantations continue to focus on specific settings and sites where historical or contemporary connections to 'actual' plantation systems – most often understood as industrialised monocultures for large-scale crop production (cf. Chao et al., 2023: 3) – can be found. In contrast, we regard the Plantationocene as an attempt to reflect more broadly on how logics quite similar, although not identical, to that of 'actual' plantations structure the exploitative relationships between humans and nonhumans on a broader level and on a global scale. One fruitful example comes from Stock (2023: 171), who analyses solar parks in India as plantations: "solar parks are energy plantations – harvesting photons to generate

photovoltaic electricity – that constitute racial regimes of ownership in the Plantationocene". Thus, we propose to understand the plantation in a more figurative sense, as a structuring element of the present; one that can also be found in other industrialised production sites, where nonhumans are integrated into economic value chains, such as in the context of animal husbandry or coal mines (see also Haraway et al., 2019). In line with Chao et al. (2023: 9), we believe that the 'plantation is good to think with' in a number of ways; ways that are not limited to historical plantation societies or large-scale crop monocultures.

Yet, as Paredes et al. (2023: 5) put it, there is a risk of reducing the plantation into a mere metaphor, when attempting to expand the "scholarly field of vision" on plantations. In order to keep analytical precision, it therefore seems important to come to terms with the central features of plantation logics. Otherwise 'plantations' might be found potentially everywhere and hence nowhere in particular, thus causing scholars to lose focus.

The plantation logics of the Plantationocene

Above all, we think that it is the specific combination of a "radical simplification; substitution of peoples, crops, microbes, and life forms; forced labour; and, crucially, the disordering of times of generation across species, including human beings" (Haraway et al., 2019: 6), that makes the 'plantation' a useful figure for assessing different production sites, in which humans and nonhumans become exploited. Haraway et al. (2019) underscore the more-than-human assemblages that underpin exploitative production systems: plantation-like systems not only exert violence on human laborers but also on a range of nonhumans, which are affected by similar rationales and forces of oppression and exploitation. According to Haraway's (2019) conception, plantation logics thus "substitute" life forms and "disorder" times of generations, be they those of humans, plants, animals or other organisms; they uproot both humans and nonhumans from their original lifeworlds, forcefully relocating and exploiting their labour in enclosed fields or distant sites. What is key here is that 'the plantation' has self-destructive tendencies since it destroys "its own base, exhausts soils, exhausts peoples, exhausts plants and animals, and proliferates pathologic pathogens" (Haraway et al., 2019: 10). Crucially, this destructive plantation logic is driven by the use of excessive violence, which cuts off social and ecological relations, enforces displacement and presses different, "polyphonic" rhythms of life into the uniform beat of capitalist-industrial production (Tsing, 2015: 23).

We thus understand Haraway et al.'s (2016) conception as a move beyond more traditional understandings of plantations, understood as large-scale crop monocultures that are bound to and extractive of the physical land and soil that they rest on (see for instance Chao et al., 2023: 3; Moore et al., 2019). Rather than focusing on the mere fixation on and to land, we understand the exhaustion of soil as one form of an exploitative relationship with nonhumans; while we regard the exploitative relationship itself as the defining feature of the plantation. It is in this more figurative understanding of plantation logics, potentially materializing in surprising or less studied sites, where we observe untapped potential. We therefore think that it is crucial to study how plantation logics unfold with a range of lively nonhumans that have so far remained underrepresented in discussions of the Plantationocene.

Placing animals in the Plantationocene

More specifically, we think that animals should be included more explicitly in accounts on the Plantationocene. Although factory farms might not be labelled as such, they nonetheless work quite similar, although not identical, to 'actual' plantations: animals become uprooted from their original lifeworlds, so as to press them into the standardised and uniform beat of production;

they become transplanted to enclosed sites, which follow the rationale to exploit their labour for maximum profit (cf. Wadiwel, 2018). We thus believe that animals become subject to violent logics that resemble that of 'actual' plantations. This connects with Overstreet's (2019) telling study on the diet of dairy cows in the U.S., in which she creatively argues that plantation logics also operate on the body of cows, more specifically, on their digestion system. As she puts it: "the simplification of ecosystems, or a 'plantation approach' to agricultural production, operates not only on the scale of global world systems or crop fields but also within the gut of dairy cows" (Overstreet, 2019: no page number). Taking cue from Besky (2022), who calls for bringing the workers of the plantation to the analytical forefront, we thus observe a need to place working animals and animal labour more explicitly in accounts on the more-than-human geographies of the Plantationocene. This opens up fruitful ground for linking the concept with the rich body of work that has discussed the role of animal capital and animal labour for exploitative production systems; works that "tend to nonhuman life as a constitutive dimension of capitalist economies" (Barua, 2019: 651). For instance, scholars have engaged with animals as commodities (Barua, 2016; Collard, 2014; Collard and Dempsey, 2013; Gillespie, 2021). Others have discussed their encounter value (Barua, 2016, 2017; Pütz, 2020) or their commercial global circulation. As Barua (2023: 13) notes, "the violent exploitation of labour power as well as other-than-human labour in the quest to produce cheap nature" is fundamental to the Plantationocene. We think that foregrounding animals in the study of plantation logics might thus help to produce a more complex understanding of the more-than-human assemblages that underpin the Plantationocene.

(Post-)socialist geographies of the Plantationocene

Moreover, we think that the Plantationocene is an analytical concept that is 'good to think with' for a range of different historical settings and regional contexts beyond (post-)colonial, capitalist production systems. Exploitative and extractive production systems that build on forced nonhuman and human labour existed before capitalism (cf. Lewis and Maslin, 2018; Stock, 2023: 171). As scholars have pointed out, the plantation created new industrial and colonial power structures that enabled European expansion and supremacy, and resulted in modern world relations (McKittrick, 2011; Mbembe, 2013: 88). Yet, while the plantation logics of synchronization, standardization, hierarchization and scalability might be understood as one expression of capitalist rationality (cf. Moore, 2017), plantation logics are not limited to capitalist systems, since "plantations [as] inherently power-laden social structures [can be] found in every modern economic system" (Wolford, 2021: 1624). Rather than overstating capitalism as an encompassing and abstract "system of power, profit, and re/production in the web of life" (Moore, 2017: 606), the Plantationocene thus directs attention to localised sites of production. As Chao et al. (2023: 5) put it: "[...] the focus on capitalism has the potential to be reductive given how much of social life takes place outside of the capitalist economy [...]". In order to take the plantation seriously as a globalised phenomenon, we thus perceive the need to open up the study of the Plantationocene for regional and historical settings beyond what is commonly understood as historical plantation societies or examples of capitalist large-scale monocultures, so as to be able to study plantation logics in less straightforward places and sites.

More specifically, with our study on nutria in the former GDR, we suggest opening up the empirical study of the Plantationocene for Central and Eastern Europe, while interrogating what this, in turn, might have to offer for the concept itself. By doing so, we take the Plantationocene to a relatively unconventional setting, moving it from the (post-)colonial contexts, in which the concept had originally developed, to a post-socialist setting. This implies a shift in attention, from the historically inherited power imbalances between Global North and South to the Global East and West divide and its present repercussions. The notion of post-socialism has emerged in the 1990s, so

as to address the transformations following the collapse of state socialism (Chelcea, 2023). Since then, scholars have criticised its homogenizing tendencies, which run in danger of simplifying the diverse and incomplete transitions in a highly heterogeneous region (e.g., Boyer and Yurchak, 2008; Chari and Verdery, 2009; Hörschelmann and Stennings, 2008; Humphrey, 2001; Pickles, 2010; Rogers, 2010). However, we think that the term might be useful, so as to capture the continuities and discontinuities of a socialist past; a take that enables a more differentiated analysis of the present (Ringel, 2022). We take our cue from Chelcea (2023: 13) who understands post-socialism as a heterochrony that "continues to recombine the past, the present, and the future, sometimes hiding, sometimes foregrounding, dynamics that (seem to have) originated during state-socialism". We think that this move to a (post-)socialist context helps to produce a more nuanced understanding of the global power dynamics that structure the Plantationocene, while its present and past power asymmetries might not be reduced to the Global North-South divide and European settler colonialism alone but rather follow multipolar and multifaceted histories.

The limitations of plantation logics and unruly potentials

Moreover, we understand the Plantationocene as a call to foreground the unruly encounters and unexpected resonances that can be found in sites and places where plantation logics unfold. This move helps to be attentive to the potential limitations of plantation-like systems and "forms of counterplantation life" (Moore et al., 2019: no page number). As different authors illustrate, the plantation enables the formation of unexpected more-than-human alliances engaging in court battles (Hetherington, 2013); the enacting of counter-politics (Paredes, 2023); or the practicing of multi-species mourning (Chao, 2023). This converses with the rich body of work that has illustrated how human (and nonhuman) resistances and unruly cooperation unfold in settings and sites that might be understood as 'plantations' in a more literal sense of the term (Beilin and Suryanarayanan, 2017; Davis et al., 2019; Kuřík, 2022; McKittrick, 2011; Ofstehage, 2021; Whitaker, 2020). For instance, one example for a site of resistance that was born out of historical plantation systems is the plot, which was cultivated independently by slaves and "spatialises what would be considered impossible under slavery: the actual growth of narratives, food, and cultural practices that materialise the deep connections between blackness and the earth and foster values that challenge systemic violence" (McKittrick, 2013: 10; see also Wynter, 1971). In this way, the plantation creates "new acts of commoning, new forms of entanglement, and new modes of social life in the shadow of a regime of social death" (Dillon, 2019: 87). In order to be attentive to practices that limit plantation logics, we perceive a fruitful link with works in the field of more-than-human and animal geographies; works that have pointed out how nonhumans are not only passive objects of attempts to order and discipline their existence, but how they also hold agency in shaping, disrupting and counteracting hegemonic power structures (Dickinson, 2022; Hobson, 2007; Johnston, 2021b; Srinivasan, 2016). We think that animals might indeed be particularly telling in regards to these unruly potentials that unfold in the presence and afterlives of plantations, something that we will pay particular attention to in our case study on nutria in the Eastern German city of Halle.

Animal labour in the Plantationocene: the nutria farms of the GDR

The history of nutria in Eastern Germany is closely intertwined with the political and economic conditions of the socialist GDR-regime. Thus, our aim for this section is to situate the concept of the Plantationocene into this specific (post-)socialist setting, while scrutinizing the history of nutria in GDR fur farms. We will approach them as illustrative figures for how plantation logics operated in the specific socialist economic context of the GDR.

During the 1970s, the GDR pursued, what it officially termed, a pro-consumer policy (Volze, 1999: 151). The government sought to implement this stance through a rise in the production of consumer goods in the domestic market (Cornehen, 1988: 70). To this end, the import of industrial plants, machines and preliminary products from the so-called 'Non-Socialist Economic Area' (NSE) became necessary (Volze, 1999: 155). From 1972 to 1978, the increased import resulted in a trade deficit of a total of 20 billion Western German mark (Schürer, 1999: 74), something that translated into a considerable debt with Western suppliers and banks (Volze, 1999: 156). Due to the non-convertibility of the domestic currency, the GDR could not pay the growing debts with it, which is why exports, such as textiles, furniture or nutria fur had to be increased in order to generate convertible foreign currency (Worst, 2011). Information about the foreign trade was concealed or kept secret by the GDR regime, yet it is estimated that 30 to 50 per cent of all the exports to non-socialist countries went to Western Germany, which, in contrast to the GDR, had adopted a capitalist market system (Worst, 2011).

In order to increase the export of nutria fur, while earning a larger sum of foreign currency, the GDR subsidised production and enabled private breeders to buy cheaper fodder, such as grain and potatoes, directly from the state-owned agricultural cooperatives, as Heinrich,¹ a former nutria breeder, told us during an interview. This created an exceptional situation in the agricultural production system of the GDR, which was based on the Soviet model and had thus been almost exclusively organised in centralised and large-scale cooperatives (so called LPGs), while land was farmed collectively (Schöne, 2005). Although state-owned fur farms also existed, historic sources indicate that 98.2 percent of all nutria farms in the GDR were privately operated in 1964 (Keil, 1967: 30); a situation that created new and lucrative sources of income for individuals (Interview Heinrich). In the case of nutria breeding, the socialist central planning economy of the GDR thus seems to have adopted a (proto-)capitalist mode of production: in order to increase foreign exchange, private entrepreneurship was encouraged through subsidies, while nutria farms became the "extended workbench of the West" (Worst, 2011), producing exclusively for export. We thus perceive the nutria farms of the GDR as 'plantations' in the more figurative sense of the term, where logics quite similar to that of 'actual' plantations unfolded: profit-driven relationships structured the exploitation of the spatially transported nonhuman labour of nutria, while the production of fur was almost exclusively designated for export. To speak in McKittrick's (2011: 955) words, nutria farms "mimic the plantation".

Historical sources also illustrate that the nutria 'plantations' were actually deeply intertwined with the socialist GDR system. Although the first German nutria farm was already established in pre-GDR times, in 1926 (Walther, 1931: 56), no fur was produced until 1930, as "all existing and new animal material was used exclusively for breeding and establishing new farms" (Bonn, 1930: 97). Although Walther (1931: 57) predicted a sharp increase in nutria breeding from 1931 onwards, it can be assumed that by the beginning of the Second World War at the latest, most of the facilities were no longer in operation and shut down. This changed with the founding of the GDR, which regarded nutria furs as "a very important source of foreign currency" (Staakener Pelztierfarm, 1954: 4). For this reason, attempts were made to convince the "many people who were badly affected by the post-war pains" of the merits of nutria farming by advertising the "high fur price", presenting nutria farming as "undemanding" and the meat as "delicious" (Staakener Pelztierfarm, 1954: 3). This seemed to work: by 1964, around 60,000 nutria furs were produced annually in the GDR (Keil, 1967: 30).

During our interview, Heinrich, who originates from a village close to the city of Halle, recounted how he had started breeding during the mid-1970s. Like most people in his home region, he worked at the Leuna-Werke, the largest chemical factory in the GDR. However, due to his relatively low salary, he decided to breed nutria from 1976 onwards, first alongside his job in the chemical industry and, later on, full-time. For this reason, he restored his father's

nutria farm, which had remained unused for almost 40 years. Altogether, the complex was 30 meters long, about seven meters wide and consisted of fourteen boxes lined up next to each other, in each caging up to 30 nutria. On the one side of the boxes, Heinrich built enclosed nesting boxes made of asbestos boards and with a paved floor, which prevented the nutria from digging and allowed for fast clean up. Above the boxes, Heinrich installed a water tube, which provided a constant and automated water supply allowing the nutria to drink and groom their fur. Before slaughter, Heinrich locked the animals into the nesting boxes and then passed by with the wheelbarrow and a transport cage, opened the roof of the boxes and picked up the nutria ready for slaughter. Then, he took one at a time, held it by its tail so that it could not fight back and used a wooden club to "really smash their heads so [they] were really gone at the first blow". Afterwards, he hung them by their feet and stabbed them in the neck so that their blood and later their guts were collected in the tub below. Finally, Heinrich cut the dead nutria at the back in order to preserve the softer and thus more valuable fur on the belly, gutted the intestines and stripped the fur. As soon as he had collected 70 to 80 pelts, he brought them to Leipzig and sold them at the state-owned central purchasing office for furs. This procedure matches with the recommendations from a GDR-guidebook (Staakener Pelztierfarm, 1954: 17), which is why we assume that Heinrich's accounts might be representative for other nutria farms of the time.

We regard this description of Heinrich's nutria farm as a telling illustration of the "radical simplification" (Haraway et al., 2019: 6) and the massive use of violence, which characterise the plantation logics of the Plantationocene. The physical outlay of the farm allowed for a standardization and scalability of production, while the cages were designed in such a way that a maximum output of profit from nutria pelts with a minimum input of work and capital was yielded. This enabled Heinrich to control and exploit the lives of the nutria as efficiently as possible: He separated young animals from their mothers after 12 weeks, and locked a male nutria with up to five female nutria in order to have a constant supply of newborn nutria throughout the year. Through this "disordering of times of generations" (Haraway et al., 2019: 6), the life rhythms of nutria were pressed into the standardised beat of capitalist production (Tsing, 2015: 23). It radically separated the nutria from their usual ecological relationships since the caged animals were neither able to swim – as a semi-aquatic species, free-roaming nutria would usually spend most time in the water – nor to dig their burrows into the ground for nesting purposes, take care of their cubs, search for food or protect their territory.

In the plantation system, to speak in Mbembe's words (2008: 160; emphasis in original), the nutria were "kept alive, but in a state of injury, in a phantom-like world of horrors and intense cruelty and profanity". Although they were able to groom their fur with a minimum and automated supply of water, this was only done so as to keep them alive and to preserve their valuable pelts until the day of their slaughtering, when they turned into a profitable commodity. The disordering of nutria generations was also achieved by the propagation of inbreeding with the aim of improving fur quality and increasing efficiency of production, so as to "achieve the desired goal of maximum performance more quickly through the appropriate selection and mating of animals with particularly good breeding characteristics" (Bollinger, 1931: 69). With its specific design, Heinrich's nutria farm thus complied with the recommendations of specialised historical guidebooks (Bollinger, 1931; Bonn, 1930; Staakener Pelztierfarm, 1954; Walther, 1931), which promoted the plantation logics of standardization, scalability, simplification and the disordering of life forms, so as to ensure maximum profit.

Despite these similarities between GDR nutria farms and 'actual' plantations, the former also followed a number of peculiarities. First, the nutria farms did not rely on forced human labour and racial forms of violence, which had been the case in colonial plantation societies (cf. McKittrick, 2011) and continues to characterise large-scale monocultures in postcolonial settings (cf. Stock, 2023). In contrast, nutria fur production presented a means for the nutria farmers of

the GDR to produce self-determined and additional sources of income. Therefore, it seems to have enabled them to escape the standardised work relations in the centralised production system of the GDR.

Second, the possibilities to construct a production facility that was as efficient as possible were limited by the lack of building materials in the socialist GDR system. Therefore, Heinrich had to come up with creative solutions that only partly matched the 'ideal' plantation logics of nutria farms propagated in guidebooks. For example, Heinrich was aware of the negative health effects of asbestos, but he had no other option. The procurement of other building materials was made difficult by the low supply in the GDR: "You didn't get a board; you didn't get a bag of cement. And then it was like this, when there was cement, you had to buy larger quantities. Like 10, 12, 15 sacks of cement [...] And then you had to bribe people, give them bribes, so that you got anything at all." Moreover, Heinrich was unable to build a larger farm for this reason, making his farm rather small-scale and only partly scalable towards a potential maximum output of profit. We suggest understanding the resulting hybrid of standardised design and improvised material as an effect of the specific socialist context of the GDR, in which the plantation logics of the nutria farms unfolded. Heinrich's nutria farm might thus be understood as a plantation-like site, which materialised through a constant maneuvering between (proto-)capitalist modes of production and the socialist logic of the GDR.

Third, we think that the GDR nutria farms are telling in regards to the specific role and function of animal labour in the Plantationocene. According to Porcher (2014: 3), understanding the function of animals for the industrial production of meat, milk, or fur requires "a theory of work which is not, as understood since Marx, anthropocentric". Quite connectedly, Wadiwel (2018: 535) argues that there is a problem in Marx' distinction between constant capital as raw material and variable capital as labour power, which cannot be transferred to nonhumans, since "it fails to account for labour where the object of production is the body of the laborers themselves". In the context of plantation logics, thus, the entire life of nutria must be understood as a production process that worked towards the moment of death, when, in their afterlives, nutria became fur, and in this way, use value was created (cf. Gillespie, 2020; Wadiwel, 2018). Nonhuman labour in the Plantationocene is thus "optimised to its death" (Colombino and Giaccaria, 2016: 1046). At the same time, the efficiency of production cannot be increased by using less raw material, but only by shortening the lives of the nonhuman laborers. We thus suggest that, in the Plantationocene, nonhumans are degraded to exploitable commodities, which are made to grow and (re)produce themselves, in the form of "a hybrid of both constant and variable capital" (Wadiwel, 2018: 535).

Moreover, our interview with Heinrich also indicated that there were limitations to the plantation logics of GDR nutria farms. As Heinrich told us, as someone who avoided killing rabbits and pigs as a child, he had to 'smash' the nutria's heads, yet struggling with the act of killing:

Not a nice job. It was no fun, I felt sorry for them every time. Because I had some with me that were really tame, they could take them in their arms like that. They were really... they could stroke them and everything. But if you are tentative, the animal is only in pain. [...] I simply got over myself. When you've had the first five, you don't think about it afterwards. (Interview Heinrich)

This quote illustrates how our interlocutor built affective relationships of care and sympathy with the animals, despite the highly standardised plantation logics that shaped the outlay and design of his farm, in which he bred and raised them. We suggest reading this as a potential act of conscious reflection on and internal resistance against the violent logics of separation and exploitation, which characterise the Plantationocene. Nonhuman laborers in the Plantationocene might thus produce affective responses by humans (Porcher, 2011), demanding their attention and care (Coulter,

2016), exposing the cruelty of mechanised killing (Wadiwel, 2018), and thus complicating their transformation into use value.

We therefore suggest that the nutria farms of the GDR present an empirical case for studying how plantation logics unfold in a specific socialist setting and how they affected both nonhumans and humans alike. As we will illustrate in the following section, even after the formal abandonment of nutria farms and the breakdown of the GDR, the nutria farms developed afterlives, where plantation logics continued in their classification as 'invasive'.

Plantation afterlives I: nutria as 'invasive alien species'

After German reunification in 1990, most nutria farms in Eastern Germany shut down. Due to the political and economic transformation following the breakdown of the GDR regime, the export of nutria fur lost its purpose as a means to earn revenues and without the government subsidies, nutria breeding was no longer a feasible business. In response, many breeders simply released their animals in order to avoid costs for their "disposal", as several interlocutors told us during interviews. The breakdown of the GDR and the following political and economic changes led to a situation where nutria lost their economic value, and became a nonhuman "surplus population" (Li, 2010) expelled from the plantation. Outside of the fur farms, nutria formed 'wild' populations along rivers and other water bodies and nowadays live, swim, breed and forage free from captivity. They successfully adapted to the local ecosystems in reunited Germany, thus creating new habitats beyond the South American continent. In this way, the fur farms of the GDR developed "afterlives" (Peano et al., 2023) through which plantation legacies continue even after the formal abandonment of the plantation sites. We thus conceive of the free-living nutria as remnants of a plantation past, illustrating how (post-)socialist relationships with nonhumans live on in different shapes and forms.

Yet, in their present form, the nutria are often denied a legitimate existence in local ecosystems, something that is reflected in their legal classification as an "invasive alien species" by the European Union (EU, 31/7/2016: 6). The corresponding EU regulation defines them not only as an "alien" species, which had been "introduced into the Union as a consequence of human intervention", but also as an "invasive" one, seen to cause "damage" to such an extent that it poses one of the "main threats to biodiversity and related ecosystem services" in Europe. This framing of the nutria comes with a direct impetus for "concerted action at Union level" aiming for their eradication (EU, 22/10/2014). In many places across Europe, where nutria have successfully settled in the 'wild', they have thus become subject to population control and management, such as systematic killing and trapping. Over the years, nutria have also become an ever more popular target for hunters. For instance, in 2022, the German hunting association announced that, for the first time, more than 100,000 nutria were shot across the country during a single hunting year, stating that "the hunting bag has increased by 57 times during the past 2 decades" (DJV, 2022).

In the Eastern German city of Halle, where nutria are common dwellers in the splendid greeneries along the river Saale, the animals also frequently trigger negative reactions and aversive feelings among inhabitants and members of the local government. For instance, in 2018, the local media reported on a "rodent plague" in the city (TV Halle, 26/3/2018), something that illustrates discussions of an "overpopulation" of nutria in the urban greeneries and the argument that there would be "too many" of them. Others perceive the nutria as "unnatural" and "maladapted", as their survival in the city would be dependent on human feeding. Due to their yellow teeth and their long, naked, rat-like tail, nutria were also often compared to rats, something that becomes apparent in their alternative depictions as "river rats" or "beaver rats" and the claim that they would present a potential reservoir of pathogens and parasites in the city. As Crowley et al. (2018) outline for grey squirrels in the UK, which are frequently labelled as "tree-rats", or Jerolmack (2008) for pigeons, which are called "flying rats": depicting nutria as "rats" connects

them with questions of "hygiene", something that "directs us toward purity, toward isolation, toward a cleansing of everything that is seen to touch our boundaries" (Ticktin, 2017: xxiv).

During interviews, our interlocutors also frequently depicted nutria as "invasive species in our ecosystem", thus reproducing the EU classification as "invasive alien species", while denying the animals a legitimate existence in the city of Halle. Fed by this idea of invasiveness, nutria in Halle were frequently represented as "aliens" or "vermin" that should be eliminated from local ecosystems. For instance, a staff member of the river maintenance authority emphasised in an interview that nutria "do not belong here", are "alien to the ecosystem" and therefore "have no business being here". Similar to the rationality of the EU's Invasive Alien Species Regulation, nutria in Halle were also depicted as a species that causes significant "damage" in and around Halle. For instance, the animals were blamed for causing erosion to river embankments due to their underground burrows, thus draining economic resources from the local government. The hunting of nutria in the areas surrounding Halle is therefore being depicted as a beneficial act of "damage defense" ("Schadensabwehr") by the regional hunting association (Die Zeit, 16/2/2022). Although the hunting of nutria with firearms is legally not allowed within the city of Halle, different members of the urban administration have nonetheless advocated for the adoption of systematic measures against the urban nutria population, so as to "protect" the vegetation and embankments along the Saale and to save on economic resources from the city council, which might become necessary for restoration purposes. Through their legal, practical and discursive construction as "invasive alien", in their plantation afterlives, nutria have thus become "matter out of place" (Philo and Wilbert, 2000), which supposedly does 'not fit in' to local ecosystems and need to be eradicated.

We think that it is precisely through this idea of invasiveness that the plantation logics, which structured the exploitative and violent relationships with nutria during GDR times, endure in the present. During their plantation past in GDR fur farms, their forced animal labour became exploitable through the logics of hierarchization, standardization and scalability, while their killing constituted an act that generated economic profit. In their plantation afterlives and freed from captivity, humans continue to work towards their killing, only this time it is framed as an act of biosecurity (cf. Barker, 2008; Clark, 2013). In contrast to the fur farm, the killing of 'invasive' nutria no longer aims to exploit them for profit, but to protect the 'native' ecosystem and avert possible economic damage. To this end, the dichotomization between 'native' and 'alien' species is introduced – a distinction that is less central for plantation logics as they do not ask 'where' something comes from, but more how 'profitable' it is at its current place.

Thus, in the afterlives of the fur farm, plantation logics seem to have turned into biosecurity logics, which continue to exert violence on the bodies of the nutria. Although their killing is now legitimised differently, in biosecurity logics the (non-)value of the life and death of living beings continues to be based on their instrumental benefit to humans. For instance, empirical studies have shown that the treatment of 'non-native' species depends on their charisma: while 'feral' pigs are brutally hunted and killed on the Santa Cruz Islands (Stanescu, 2017), free-ranging horses on Cumberland Island are considered an enrichment and tourist attraction, even though they have a negative impact on the local ecosystem (Cummings and Cummings, 2017). In this sense, Braun (2013: 55) conceptualises biosecurity as an anthropocentric and "excessively violent" power structure that supports certain life forms through the killing of others. Building on this, we observe a similarity between biosecurity and plantation logics, as both violently pursue the Western ideal of a controlled nature optimised to human preferences (cf. Wolford, 2021). For this reason, we suggest to understand the ongoing killing of 'invasive' nutria through practices of biosecurity not as disruption but as a transformed continuation of plantation logics.

Our case indicates that there is untapped potential to bring the Plantationocene concept into closer conversation with scholarly discussions on 'invasiveness' (see for instance Atchison and

Head, 2013; Dobson et al., 2013; Warren, 2007). Kornherr and Pütz (2022) illustrate with the case of the Nile geese in the city of Frankfurt/Main that certain species, which are considered as 'invasive', can become equated with their excrements, construed as an alien 'threat' in urban environments. Invasive species thus become subject to processes of abjection, which inflict a "moral politics of neglect" (Atchison and Pilkinton, 2022: 3) and enable the state to execute governing practices that work towards their exclusion and violent erasure. At the same time, scholars have also frequently pointed at the agency of nonhumans classified as 'invasive' and their potential to remain unruly. For instance, Everts (2015) points at the myth of a fixed understanding of space and time, through which biologists look at ecosystems as isolated entities, while comparing the species living there at time (a) and at time (b). By doing so, they might risk overlooking the complex and dynamic relationships between humans and nonhumans that underpin local ecosystems. Atchinson (2019: 26) thus observes that "the problem of invasive species is often considered to be a human one", when nonhuman agency and more-than-human entanglements are overlooked (see also McNeely, 2001). Head et al. (2019) demonstrate how a plant species challenged management practices in Australia and, in a case study in Germany, Everts (2015: 196) illustrates the "capacity of invasive life to produce a 'new' community of practice".

Taking our cue from these works, we suggest that the present status of the nutria demonstrates how a continuation of plantation logics might exist side by side with changes, discontinuities and more unruly potentials. Through their ability to form 'wild' populations beyond human control, the nutria illustrate their nonhuman agency in shaping the human-nonhuman relationships of the Plantationocene. We suggest that it is precisely this ability to exceed the plantation logics of the GDR farms, which makes them a target of practices and discourses that produce them as 'invasive aliens' in their plantation afterlives. This points to an ambivalent relationship between potentials for nonhumans to remain unruly, while moving beyond their former plantation lives, and a continuation of plantation logics. Plantation afterlives are therefore not only characterised by continuity, but also by disruption and change (cf. Peano et al., 2023). As we will illustrate in the next section, the newly formed more-than-human entanglements of nutria in Halle might hold such potential to move beyond the plantation.

Plantation afterlives II: more-than-human entanglements

Despite their legal classification as 'invasive alien species', no systematic measures to manage or eliminate the nutria in Halle were implemented, when we conducted our fieldwork in 2022 (cf. City of Halle, 2021). The local nature conservation authority did not perceive an existential threat by the nutria for biodiversity conservation in protected areas, while the areas where most of the nutria live were classified as water bodies of "secondary importance" because they were artificially constructed. Thus, rather than as a matter of their concern, the local conservation authority depicted the nutria as a responsibility for the local hunting authority. The hunting authority, in turn, perceived its options to manage the nutria population in the city as limited. During an interview, a representative claimed that the animals cannot be shot in the urban area, while setting up live traps would also prove difficult: the spots, where many nutria live, are also frequented by humans, who, for instance, go to walk their dogs in the area. Other areas would be too steep or otherwise unsuitable for setting up traps close to the water.

We thus suggest that the greeneries along the Saale might have served as an 'urban sanctuary' in which the nutria have been able to live and thrive relatively undisturbed from human intervention. In this way, the animals formed new relationships and entanglements with humans and nonhumans; relationships that might hold potential to exceed the logics of hierarchization and violent separation that were forced on their former plantation after/lives. For instance, despite their classification as 'invasive aliens', the nutria have been able to form close and more sympathetic relationships

with the inhabitants of Halle. The animals pose frequent sightings during walks along the Saale, something that makes them a well-known local species that is often regarded as 'typical' for the city, as an unofficial 'mascot', or even as a sightseeing attraction for people who come to visit the city. This was illustrated, for instance, during the first authors' fieldwork, when he talked to a group of teenagers gathering close to the Saale, stating that nutria presented a "memory of childhood" from him and "such a Halle-thing". In a similar vein, a local politician stated in an interview: "I have the feeling that they [the nutria] are absolutely already part of the perception of what Halle is like and what belongs to Halle".

One example for the intimate relationships that formed between humans and nutria in the afterlives of the fur farms is Klaus Bitrol, an elderly man in his 80 s, whom the first author of this article encountered during his observations in Halle. Bitrol stated that, since 1998, he had come regularly to a spot close to the Saale, so as to feed and observe the nutria. Over the years, when he came to see them more and more often, observed them, acquired knowledge about them in books and adapted his behaviour accordingly, he gradually formed a caring relationship with them. For example, in winter, he made sure that their fragile teeth did not break off due to frozen food: "I always trampled the snow flat and put the oatmeal on it. And then the vegetables on top. So that they don't cool down immediately in winter when it's below zero. The oat flakes insulate them for a moment". Feeding, we suggest, thus became a practice that provides an additional food source for nutria and enables them to reproduce, while it fulfills different social functions for humans in turn. This resonates with what the seminal anthropologist Marcel Mauss (1990 [1925]) had in mind with his conception of "gift-giving": it always comes with an incentive to reciprocate, for instance, by rewarding human intentions to observe 'exotic' animals during walks along the Saale.

In their plantation afterlives, the nutria thus also formed more symbiotic partnerships with humans. In this context, depictions of nutria as 'charismatic' and as 'typical' for the urban environments might hold potential to offer an alternative to their depiction as 'matter out of place' that needs to be eradicated. As such, we came across moments when their fate was enrolled by the public, so as to challenge their legal classification as 'invasive alien species'. As a representative of an animal welfare organization stated in our interview: "In a hundred years, no one will talk about the fact that they are invasive. Because at some point they will be native again. They enrich!" In other instances, our interlocutors questioned the link between nutria and their supposed 'damage' to river ecosystems or human-built infrastructure. While river maintenance authorities frequently blamed the nutria for causing 'damage' to local ecosystems, animal welfare organizations and some local politicians claimed that there was no scientific proof for such statements. In a discussion with a veterinarian from Hanover, she also explained to us how ecological entanglements are too complex to provide a universally valid proof that nutria cause direct harm in local ecosystems. This contestation of the classification of nutria as 'invasive' illustrates how the underlying assumptions of fixed time and space were considered as arbitrary by some.

In consequence, other possible ways of relating might have emerged in the plantation afterlives of the GDR fur farms; ways of caring and becoming-with, which ascribe new value to the lives of the nutria in the Plantationocene. Only this time, their value is not reduced to the economic profit they may or may not produce for humans. Along with their official classification as 'harmful' and 'invasive', nutria were also considered as beings that are endowed with "nonhuman charisma" (Lorimer, 2007), so that active resistance against violent relationships with the nutria becomes a possibility. These alternative ways of relating with the nutria may have hindered attempts to systematically eliminate the animals in the city of Halle: although members of the local government frequently denied nutria a legitimate existence in local environments, they often avoided the implementation of systematic elimination measures due to the more sympathetic stances towards the nutria among the urban public. As the head of the regional coordination office for invasive neophytes told us during an interview: "nobody here dares to be publicly against it, against the

nutria". This points to the ambivalent and paradox processes that structure plantation afterlives, indicating how unruly potentials that work towards a different alternative exist side by side with the continuation of plantation logics.

Another relationship that nutria had forged and that facilitated their thriving in local ecosystems had already started in the fur farms of the GDR. While our interlocutor, the former nutria breeder Heinrich, exclusively fed plant fodder to the nutria on his farm, some breeders – intentionally or unintentionally – also gave nutria pork to eat (Landesjägerschaft Niedersachsen, 2020). Through the meat, nutria came in touch with trichinae, small threadworms that are only about 1.5 millimeters long and remain in a lime capsule, until it dissolves in the stomach acid and the worms multiply and settle in the muscles of the nutria (Moretti et al., 2001). Since trichinae can cause serious human diseases, nutria meat became subject to a general inspection obligation in Western Germany since 1981 (Hinz, 1991), what remained so after German reunification. While escaped nutria had formerly constituted a popular hunting target because of their meat and fur, from this point onwards, nutria had to undergo examination by a meat inspector, making it less feasible and common to eat their meat. Although incentives are taken more recently to market nutria as ‘tasty delicacy’ and the inspection obligation was suspended in 2020 (cf. BR, 08/02/2023; Fleischtheke, 2023), we perceive of the relationship with trichinae as an unruly partnership that contributed to the establishment of nutria outside of plantations, while allowing the trichinae to reproduce in their muscles.

Moreover, we suggest that, outside of the plantation, nutria formed new entanglements with ducks. Both ducks and nutria often eat the same food, thus sharing whatever is fed to them by the human inhabitants of the city. As a young family remarked during the observations along the Saale: "You can't feed ducks and nutria separately!" Nutria thus opened up additional food sources for ducks, while ducks expand the perception radius of the nutria: on the other side of the river Saale, opposite the spot where many nutria live, there is a small platform in the river, from which by-passers often feed animals with pieces of bread. Attracted by this, ducks come flying in large groups and land on the river, causing the water to splash up. In the observations, it appeared as if the nutria only became aware of the feeding because of the ducks and thereupon swam to the other side. The first author could not observe any signs of rivalry or conflict between nutria and ducks during his observations along the Saale. Rather, the animals often swam together through the water in search of bread and did not try to scare each other away. This suggests that the relationships between nutria and ducks might provide opportunities for both species. Yet, the relationship between ducks and nutria should not be simplified as a cooperative partnership and could rather be more ambivalent than observed in Halle. For instance, Bertolino et al. (2011: 336) observed that nutria disturb bird nests in Italy by using them as resting platforms, which can have "a potentially high impact on the reproduction performance of waterbirds". Moreover, an animal activist pointed out that the feeding on large quantities of bread and other processed foods, which are provided to ducks, might harm the nutria in turn, since it might oppose their natural diet.

A similar ambivalence appeared to characterise the more-than-human entanglements between nutria and raccoons; a species that is also classified as ‘invasive’ to the urban environments of Halle. For instance, Bitrol recounted how he had seen raccoons for the first time earlier that year, apparently attracted by his feedings. The first author observed a whole group of raccoons several times too, once scaring away nutria and ducks, and another time eating the leftover food. Omnivorous raccoons can even constitute potential predators for young nutria. Yet, since nutria stay close to the water, they are usually able to escape.

Taken together, we argue that the relationships of nutria with humans, trichinae, ducks and raccoons indicate potentials to move beyond plantation logics. Rather than being based on separation, hierarchical ordering and violent exploitation, their newly formed more-than-human entanglements seem to demonstrate alternative possibilities for reciprocity and commoning (cf. Dillon, 2019). Yet,

we do not intend to romanticise nutria's relationships as resistant or subversive. By contrast, we emphasise the ambivalence of plantation afterlives so as to avoid "the binary approach that pits plantation durabilities against counter-plantation dynamics" (Peano et al., 2023: 16). In this sense, we understand plantation afterlives as temporal multiplicities in which seemingly contradictory processes unfold simultaneously; processes that are related to a plantation past but are not necessarily determined by the continuation of plantation logics.

Conclusion

The aim of this article was to contribute to recent discussions on the concept of the Plantationocene (Haraway, 2015; Haraway et al., 2016), which we regard as a useful analytical tool for critically assessing the profit-oriented relationships with nonhumans and respective modes of production. By drawing on the case of nutria in and around the Eastern German city of Halle, our intention was to illustrate how the logics of the Plantationocene also unfold in other spatial and empirical contexts beyond (post-)colonial monocultures, which have so far constituted the dominant research site. We have argued that the current and past fate of nutria in Eastern Germany is deeply enshrined in the plantation system of the GDR regime, where they were exploited as animal laborers for the payment of foreign debts. We thus suggest that plantation-like modes of production and corresponding power structures expand towards animals and can also be found in the (post-)socialist context of Central and Eastern Europe. In line with Haraway et al. (2019), our aim was to point out how the plantation enforces the industrial exploitation of all nonhuman critters, while differences in their role and modes of exploitation prevail.

Moreover, we investigated the current situation of nutria in Halle, focusing on their legal status as an 'invasive alien species' and their more-than-human entanglements. Expelled from the plantation and without the attributed economic value, nutria were able to form thriving populations in local ecosystems, becoming part of the urban fabric of Halle. As we have demonstrated, nutria established new and self-determined relationships with humans and non-humans, partially leaving plantation logics behind. However, the resulting entanglements have ambivalent effects: On the one hand, nutria, trichinae, humans, ducks and raccoons benefit from new food sources, mutual protection, while inhabitants of the city formed caring relationships with nutria; on the other hand, the 'wild' nutria populations are blamed for 'damaging' infrastructures, ecosystems and other animal and plant species, which is why nutria are legally considered as 'invasive'. We suggest that in the afterlives of the fur farms, continuities of plantation logics and possibilities for different alternatives not only unfold simultaneously, but also co-constitute each other. Thus, in our reading, the Plantationocene outlasts 'actual' plantations, creating continuous ruptures to which it adapts.

Our findings therefore indicate that moving beyond the plantation, in the literal sense of the term, might provide a richer and more nuanced picture of not only the workings and effects of the Plantationocene on different (non)humans but also its seemingly contradictory afterlives. This 'moving beyond' may occur in four ways. First, spatially, by examining plantation-like production sites beyond (post-)colonial contexts as well as by taking into account that 'an outside' of the plantation exists. Second, temporally, by scrutinizing temporal continuities as well as discontinuities in power structures that originate in historical plantation systems. Thirdly, by stepping back from an understanding of the plantation as monocultures of plants, instead, foregrounding how similar modes of production, exploitation and domination may also occur at other sites that might figure as a plantation, understood in a more figurative sense; and finally, by tracing the limitations of plantations, revealing unruly practices and strategies of critters for forging more-than-human entanglements beyond plantation logics. This might pave the way for an

understanding of the Plantationocene that emphasises its different social, political and historical formations and takes the plantation seriously as a globalised phenomenon that structures our planetary present.

Highlights

- We analyse the nutria farms of the GDR as ‘plantations’ and argue that the concept of the Plantationocene can be fruitfully applied to animals.
- We apply the concept of the Plantationocene to the (post-)socialist context of Eastern Germany, thereby taking it to a less studied regional and historical setting
- We discuss the current classification of nutria as ‘invasive alien species’ and analyse the continuities of plantation logics in the afterlives of the fur farms
- We examine the more-than-human entanglements of free-roaming nutria in the city of Halle
- We suggest moving beyond more literal understandings of the plantation towards a more figurative approach, so as to study how the Plantationocene works across different species, spaces and times.

Acknowledgements

We would like to thank the three anonymous reviewers for providing highly valuable feedback on an earlier version of this manuscript. In addition, the first author thanks his interlocutors for their time taken and the insights provided. He also thanks Tonio Weicker and Sasha Disko-Schmidt for their helpful comments on an earlier version of this paper.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Note

1. In order to preserve their identity, all names of interlocutors were replaced through pseudonyms.

References

- Afrizal (2015) Third-party intervention in terminating oil palm plantation conflicts in Indonesia: A structural analysis. *Sojourn: Journal of Social Issues in Southeast Asia* 30(1): 151–172.
- Atchinson J (2019) Thriving in the Anthropocene: Understanding human-weed relations and invasive plant management using theories of practice. In: Maller C and Strengers Y (eds) *Social Practices and Dynamic Non-Humans*. Cham: Palgrave Macmillan, pp. 25–46.
- Atchison J and Head L (2013) Eradicating bodies in invasive plant management. *Environment and Planning D: Society and Space* 31(6): 951–968.
- Atchison J and Pilkinton M (2022) Abject life and disaster: Opportunity and invasive species governance following the 2019–2020 Australian bushfires. *Political Geography* 99: 102774.
- Barker K (2008) Flexible boundaries in biosecurity: Accommodating gorse in Aotearoa New Zealand. *Environment and Planning A* 40(7): 1598–1614.
- Barua M (2016) Lively commodities and encounter value. *Environment and Planning D: Society and Space* 34(4): 725–744.

- Barua M (2017) Nonhuman labour, encounter value, spectacular accumulation: The geographies of a lively commodity. *Transactions of the Institute of British Geographers* 42(2): 274–288.
- Barua M (2019) Animating capital: Work, commodities, circulation. *Progress in Human Geography* 43(4): 650–669.
- Barua M (2023) Plantationocene: A vegetal geography. *Annals of the American Association of Geographers* 113(1): 13–29.
- Beckford GL (1972) *Persistent Poverty: Underdevelopment in Plantation Economies of the Third World*. Oxford: Oxford University Press.
- Beilin KO and Suryanarayanan S (2017) The war between amaranth and soy: Interspecies resistance to transgenic soy agriculture in Argentina. *Environmental Humanities* 9(2): 204–229.
- Bergner G (2019) Introduction: The plantation, the postplantation, and the afterlives of slavery. *American Literature* 91(3): 447–457.
- Bertolino S, Angelici C, Monaco E, et al. (2011) Interactions between coypu (*Myocastor coypus*) and bird nests in three Mediterranean wetlands of central Italy. *Hystrix* 22(2): 333–339.
- Besky S (2022) Reproducing the plantation. *Annals of the American Association of Geographers*. 1–4. <https://doi.org/10.1080/24694452.2022.2147050> .
- Bollinger H (1931) *Die Nutriazucht: Praktische Anleitung für Anfänger*. Hannover: Schaper.
- Bonn J (1930) *Die Nutria, ihre Lebensgewohnheiten und ihre Aufzucht in der Gefangenschaft*. Dessau: Böhlert.
- Boyer D and Yurchak A (2008) Postsocialist studies, cultures of parody and American stio. *Anthropology News* 49(8): 9–10.
- BR (08/02/2023) Exot auf dem Teller: Restaurants servieren Nutria-Fleisch.
- Brass T and Bernstein H (1992) Introduction: Proletarianisation and deproletarianisation on the colonial plantation. In: Daniel V, Bernstein H and Brass T (eds) *Plantations, Proletarians and Peasants in Colonial Asia*. London: Frank Cass & Co, pp. 1–41.
- Braun B (2013) Power over life. Biosecurity as biopolitics. In: Dobson A, Barker K and Taylor SL (eds) *Biosecurity. The Socio-Politics of Invasive species and Infectious Diseases*. New York: Routledge, pp. 45–58.
- Candea M (2010) “I fell in love with Carlos the meerkat”: Engagement and detachment in human–animal relations. *American Ethnologist* 37(2): 241–258.
- Carter J and Leonard BP (2002) A review of the literature on the worldwide distribution, spread of, and efforts to eradicate the coypu (*Myocastor coypus*). *Wildlife Society Bulletin* 30(1): 162–175. <https://www.jstor.org/stable/3784650>.
- CBS News (31/12/2022) How wildlife experts eradicated nutria from Chesapeake Bay.
- Chao S (2021) Children of the palms: Growing plants and growing people in a Papuan Plantationocene. *Journal of the Royal Anthropological Institute* 27(2): 245–264.
- Chao S (2023) Multispecies mourning: Grieving as resistance on the West Papuan plantation frontier. *Cultural Studies* 37(4): 553–579.
- Chao S, Wolford W, Ofstehage A, et al. (2023) The Plantationocene as analytical concept: a forum for dialogue and reflection. *The Journal of Peasant Studies* 51(3): 541–563. <https://doi.org/10.1080/03066150.2023.2228212> .
- Chari S and Verdery K (2009) Thinking between the posts: Postcolonialism, post-socialism, and ethnography after the cold war. *Comparative Studies in Society and History* 51(1): 6–34.
- Chelcea L (2023) Goodbye, post-socialism? Stranger things beyond the Global East. *Eurasian Geography and Economics*. 1–27. <https://doi.org/10.1080/15387216.2023.2236126>.
- City of Halle (2021) Sitzung des Stadtrates am 22.12.2021. Anfrage der Fraktion BÜNDNIS 90/DIE GRÜNEN zur Nutriapopulation in Halle (Saale).
- Clark N (2013) Mobile life: Biosecurity practices and insect globalization. *Science as Culture* 22(1): 16–37.
- Collard R-C (2014) Putting animals back together, taking commodities apart. *Annals of the Association of American Geographers* 104(1): 151–165.

- Collard R-C and Dempsey J (2013) Life for sale? The politics of lively commodities. *Environment and Planning A* 45(11): 2682–2699.
- Colombino A and Giaccaria P (2016) Dead liveness/living deadness: Thresholds of non-human life and death in biocapitalism. *Environment and Planning D: Society and Space* 34(6): 1044–1062.
- Cornehen D (1988) Die Wirtschaft der DDR in der Honecker-Ära. *Vierteljahrshefte zur Wirtschaftsforschung* 59: 70–79.
- Coulter K (2016) Beyond human to humane: A multispecies analysis of care work, its repression, and its potential. *Studies in Social Justice* 10(2): 199–219.
- Crowley SL, Hinchliffe S and McDonald RA (2018) Killing squirrels: Exploring motivations and practices of lethal wildlife management. *Environment and Planning E: Nature and Space* 1(1-2): 120–143.
- Crutzen PJ (2006) The “Anthropocene”. In: *Earth System Science in the Anthropocene*. Berlin, Heidelberg, New York: Springer, pp.13–18. https://doi.org/10.1007/3-540-26590-2_3 .
- Cummings K and Cummings K (2017) Welcoming the stranger. Coercive reproduction and invasive species. In: Stanescu J and Cummings K (eds) *The Ethics and Rhetoric of Invasion Ecology*. Lanham: Lexington Books, pp. 103–116.
- Davis J, Moulton AA, Van Sant L, et al. (2019) Anthropocene, Capitalocene, ... Plantationocene?: A manifesto for ecological justice in an age of global crises. *Geography Compass* 13(5): e12438.
- Dickinson H (2022) Caviar matter (s): The material politics of the European caviar grey market. *Political Geography* 99: 102737.
- Die Zeit (16/2/2022) Etwa 11000 getötete Nutrias in Sachsen-Anhalt.
- Dillon EM (2019) The Plantationocene and the performative commons: A brief history of uncommoning. *Minnesota Review* 2019(93): 83–93.
- DJV (2022) Erstmals über 100.000 Nutrias erlegt.
- Dobson A, Barker K and Taylor SL (2013) *Biosecurity: The Socio-politics of Invasive Species and Infectious Diseases*. London: Routledge.
- EU (22/10/2014) Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species.
- EU (31/7/2016) Commission Implementing Regulation 2016/1141- Adopting a list of invasive alien species of Union concern.
- Evans J (1970) *About Nutria and Their Control*. Denver: US Bureau of Sport Fisheries and Wildlife.
- Everts J (2015) Invasive life, communities of practice, and communities of fate. *Geografiska Annaler: Series B, Human Geography* 97(2): 195–208.
- Fleischtheke (2023) Nutria.
- Gillespie K (2016) Nonhuman animal resistance and the improprieties of live property. In: Braverman I (ed) *Animals, Biopolitics, Law: Lively Legalities*. London: Routledge, pp.117–134.
- Gillespie K (2020) *The Cow with Ear Tag# 1389*. University of Chicago Press. <https://doi.org/10.7208/9780226582993-005> .
- Gillespie K (2021) The afterlives of the lively commodity: Life-worlds, death-worlds, rotting-worlds. *Environment and Planning A: Economy and Space* 53(2): 280–295.
- Haraway D (2015) Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making kin. *Environmental Humanities* 6(1): 159–165.
- Haraway D, Ishikawa N, Gilbert SF, et al. (2016) Anthropologists are talking – About the Anthropocene. *Ethnos* 81(3): 535–564.
- Haraway D, Tsing A and Mitman G (2019) Reflections on the Plantationocene. *Edge Effects* [Online]. Available from https://edgeeffects.net/wp-content/uploads/2019/06/PlantationoceneReflections_Haraway_Tsing.pdf. last accessed on 16/05/2024.
- Hartigan J Jr (2017) *Care of the Species: Races of Corn and the Science of Plant Biodiversity*. Minneapolis: University of Minnesota Press. <https://doi.org/10.5749/j.ctt1pw718> .
- Head L, Atchinson J and Phillips C (2019) The distinctive capacities of plants: Re-thinking difference via invasive species. *Transactions of the Institute of British Geographers* 40(3): 399–413.

- Hetherington K (2013) Beans before the law: Knowledge practices, responsibility, and the Paraguayan soy boom. *Cultural Anthropology* 28(1): 65–85.
- Hinz E (1991) Trichinellosis and trichinellosis control in Germany. *Southeast Asian Journal of Tropical Medicine and Public Health* 22(Suppl): 329–333.
- Hobson K (2007) Political animals? On animals as subjects in an enlarged political geography. *Political Geography* 26(3): 250–267.
- Hörschelmann K and Stenning A (2008) Ethnographies of postsocialist change. *Progress in Human Geography* 32(3): 339–361.
- Humphrey C (2001) Does the category ‘postsocialist’ still make sense. In: Hann C (ed) *Postsocialism: Ideals, Ideologies Practices in Eurasia*. London: Routledge, pp.12–14.
- Jegathesan M (2021) Black feminist plots before the Plantationocene and anthropology’s “regional closets”. *Feminist Anthropology* 2(1): 78–93.
- Jerolmack C (2008) How pigeons became rats: The cultural-spatial logic of problem animals. *Social Problems* 55(1): 72–94.
- Johnston J (2021a) Imposing ferality: A technopolitical analysis of feral and free-roaming animal classification technologies. *Urban Geography* 44(10): 1–22. <https://doi.org/10.1080/02723638.2021.1985305>.
- Johnston J (2021b) Incongruous killing: Cats, nonhuman resistance, and precarious life beyond biopolitical techniques of making-live. *Contemporary Social Science* 16(1): 71–83.
- Keil H (1967) *Der Handel mit Pelzrohffellen: Bedingungen und Aufgaben des Beschaffungshandels zur Versorgung der Rauchwarenindustrie und des Außenhandels der DDR mit Pelzrohffellen*. Berlin: Zentrale Leitstelle für Information und Dokumentation.
- Kirksey SE and Helmreich S (2010) The emergence of multispecies ethnography. *Cultural Anthropology* 25(4): 545–576.
- Kornherr E and Pütz R (2022) Othering, governing, and resistance of abject urban animals: Egyptian geese and their right to the city. *Political Geography* 99: 102775.
- Kuřík B (2022) Towards an anthropology of more-than-human resistance: New challenges for noticing conflicts in the Plantationocene. *Sociální Studia/Social Studies* 19(1): 55–72.
- Landesjägerschaft Niedersachsen (2020) Nutria: Wegfall der Trichinenuntersuchung.
- Lewis SL and Maslin MA (2018) *The Human Planet: How We Created the Anthropocene*. New Haven: Yale University Press.
- Li TM (2010) To make live or let die? Rural dispossession and the protection of surplus populations. In: Castree N, Chatterton P, Heynen N, Lerner W and Wright MW (eds) *The Point Is to Change it: Geographies of Hope and Survival in an Age of Crisis*. Malden: Wiley-Blackwell, pp.66–93.
- Li TM (2018) After the land grab: Infrastructural violence and the “mafia system” in Indonesia’s oil palm plantation zones. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 96: 328–337.
- Lorimer J (2007) Nonhuman charisma. *Environment and Planning D: Society and Space* 25(5): 911–932.
- Mauss M (1990 [1925]) *The Gift: The Form and Reason for Exchange in Archaic Societies*. London: Routledge.
- Mbembe A (2008) Necropolitics. In: Morton S and Bygrave S (eds) *Foucault in an Age of Terror - Essays on Biopolitics and the Defence of Society*. Basingstoke: Palgrave Macmillan, pp.152–182.
- Mbembe A (2013) *Critique de la raison nègre*. Paris: Éditions La Découverte.
- McInnis JC (2019) Black women’s geographies and the afterlives of the sugar plantation. *American Literary History* 31(4): 741–774.
- McKittrick K (2011) On plantations, prisons, and a black sense of place. *Social & Cultural Geography* 12(8): 947–963.
- McKittrick K (2013) Plantation futures. *Small axe: A Caribbean Journal of Criticism* 17(3 (42)): 1–15.
- McNeely JA (2001) *The Great Reshuffling: Human Dimensions of Invasive Alien Species*. Cambridge, UK: IUCN.
- Mintz SW (1989) *Caribbean Transformations*. New York: Columbia University Press.
- Mitteldeutsche Zeitung (13/01/22) Wie ist es um Halles Nutrias bestellt?

- Moore JW (2017) The Capitalocene, part I: On the nature and origins of our ecological crisis. *The Journal of Peasant Studies* 44(3): 594–630.
- Moore S, Allewaert M, Gómez PF, et al (2019) Plantation Legacies. *Edge Effects* [Online]. Available from <https://edgeeffects.net/plantation-legacies-plantationocene/>. last accessed 16/05/2024.
- Moretti A, Fioretti DP, Grelloni V, et al. (2001) Susceptibility of nutria (*Myocastor coypus*) to Trichinella infection: Biological aspects. *Parasite* 8: S206–S208.
- Ofstehage A (2021) Working the Plantationocene. *Exertions* [Online]. Available from <https://doi.org/10.21428/1d6be30e.932d8ce0>. last accessed 16/05/2024.
- Ofstehage A (2023): Making soil in the Plantationocene. *Journal of Peasant Studies* 51(3): 603–623. DOI: 10.1080/03066150.2023.2266705 .
- Overstreet KA (2019) Plantation inside the cow: Capitalist indigestions and the rumen microbial universe. *Engagement* [Online]. Available from <https://aesengagement.wordpress.com/2019/03/05/a-plantation-inside-the-cow-capitalist-indigestions-and-the-rumen-microbial-universe/>. last accessed 16/05/2024.
- Paredes A (2023) Experimental science for the ‘bananapocalypse’: Counter politics in the Plantationocene. *Ethnos* 88(4): 837–863.
- Paredes A, Chao S and Araya AL (2023) *Introduction to the Intervention Symposium – ‘Plantation Methodologies: Questioning Scale, Space and Subjecthood*. Antipode [Online]. Available from <https://antipodeonline.org/2024/01/04/plantation-methodologies/>. last accessed 16/05/2024
- Peano I, Macedo M and Le Petitcorps C (2023) Introduction: Viewing plantations at the intersection of political ecologies and multiple space-times. In: Le Petitcorps C, Macedo M and Peano I (eds) *Global Plantations in the Modern World: Sovereignties, Ecologies, Afterlives*. Cham: Springer International Publishing, pp.1–32.
- Philo C (1995) Animals, geography, and the city: Notes on inclusions and exclusions. *Environment and Planning D: Society and Space* 13(6): 655–681.
- Philo C and Wilbert C (2000) *Animal Spaces, Beastly Places: New Geographies of Human-Animal Relations*. London: Routledge.
- Pickles J (2010) The spirit of post-socialism: Common spaces and the production of diversity. *European Urban and Regional Studies* 17(2): 127–140.
- Porcher J (2011) The relationship between workers and animals in the pork industry: A shared suffering. *Journal of Agricultural and Environmental Ethics* 24(1): 3–17.
- Porcher J (2014) The work of animals: A challenge for social sciences. *Humanimalia* 6(1): 1–9.
- Pütz R (2020) Making companions: Companionability and encounter value in the marketization of the American mustang. *Environment and Planning E: Nature and Space* 4(2): 585–602.
- Ringel F (2022) The time of post-socialism: On the future of an anthropological concept. *Critique of Anthropology* 42(2): 191–208.
- Rogers D (2010) Post-socialisms unbound: Connections, critiques comparisons. *Slavic Review* 69(1): 1–15.
- Schöne J (2005) *Die Landwirtschaft der DDR 1945-1990*. Erfurt: Landeszentrale für politische Bildung Thüringen.
- Schürer G (1999) Planung und Lenkung der Volkswirtschaft in der DDR –Ein Zeitzeugenbericht aus dem Zentrum der DDR-Wirtschaftslenkung. In: Kuhrt E, Buck JF and Holzweißig G (eds) *Die Endzeit der DDR-Wirtschaft – Analysen zur Wirtschafts-, Sozial- und Umweltpolitik*. Opladen: Leske & Budrich, pp.61–98.
- Srinivasan K (2016) Towards a political animal geography? *Political Geography* 50: 76–78.
- Staakener Pelztierfarm (1954) *Meine Pelztierfarm! Genaueste Bau- und Zuchtanleitung für den Aufbau einer Nutriazucht mit Bauzeichnungen eines langerprobten Gehegesystems*. Berlin: Staakener Pelztierfarm.
- Stanescu V (2017) The judas pig. The killing of ‘feral’ pigs on the Santa Cruz Islands, biopolitics, and the rise of the post-commodity fetish. In: Stanescu J and Cummings K (eds) *The Ethics and Rhetoric of Invasion Ecology*. Lanham: Lexington Books, 61–86.
- Stock R (2023) Power for the Plantationocene: Solar parks as the colonial form of an energy plantation. *The Journal of Peasant Studies* 50(1): 162–184.

- Strange SE (2023): Singapore: Plantation city?. In: Paredes A, Chao S and Araya AL (eds) *Intervention Symposium - Plantation Methodologies: Questioning Scale, Space, and Subjecthood*. Antipode [Online]. Available from: https://antipodeonline.org/wp-content/uploads/2023/12/8_Strange.pdf. last accessed 16/05/2024.
- The Japan Times (21/6/2022) Invasive rats spreading across Yamaguchi, damaging crops.
- Thomas DA (2019) *Political Life in the Wake of the Plantation: Sovereignty, Witnessing, Repair*. Durham: Duke University Press.
- Ticktin M (2017) Invasive others: Toward a contaminated world. *Social Research: An International Quarterly* 84(1): xxi–xxxiv.
- Tsing A (2012) Unruly edges: Mushrooms as companion species. *Environmental Humanities* 1(1): 141–154.
- Tsing AL (2015) *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton/Oxford: Princeton University Press.
- TV Halle (26/3/2018) Jagd auf Halles Nutrias? Nachplage beschäftigt die Stadt.
- Volze A (1999) Zur Devisenverschuldung der DDR—Entstehung, Bewältigung und Folgen. In: Kuhrt E, Buck JF and Holzweißig G (eds) *Die Endzeit der DDR-Wirtschaft—Analysen zur Wirtschafts-, Sozial- und Umweltpolitik*. Opladen: Leske & Budrich, pp.151–187.
- Wadiwel D (2018) Chicken harvesting machine: Animal labor, resistance, and the time of production. *South Atlantic Quarterly* 117(3): 527–549.
- Walther AR (1931) *Der Sumpfbiber. Nutria, seine Zucht und Haltung als Pelztier in Europa*. München: Mayer.
- Wang C and Xu Y (2022) Reflecting on the Plantationocene: The political economy of sugarcane plantations in Guangxi, China. *The Journal of Peasant Studies* 51(3): 1–22. <https://doi.org/10.1080/03066150.2022.2087180>.
- Warren CR (2007) Perspectives on the alien versus native species debate: A critique of concepts, language and practice. *Progress in Human Geography* 31(4): 427–446.
- Whitaker JA (2020) Strategic alliance and the Plantationocene among the Makushi in Guyana. *Social Anthropology/Anthropologie Sociale* 28(4): 881–896.
- Whitely L (2008) Q&A: Science sketched out: The annual UK Big Draw festival, a month of nationwide workshops and talks launched this weekend in London, teaches people how to 'see' through drawing. Terry Rosenberg, head of design at Goldsmiths, University of London, explains how gaining skills in life drawing can help scientists perceive the world and communicate their results. *Nature* 455(7212): 468–469.
- Williams E (1944) *Capitalism and Slavery*. Chapel Hill: University of North Carolina Press.
- Wolford W (2021) The Plantationocene: A lusotropical contribution to the theory. *Annals of the American Association of Geographers* 111(6): 1622–1639.
- Woods CA (2007) Sittin on TOP OF THE WORLD: The challenges of blues and hip hop geography. In: McKittrick K and Woods CA (eds) *Black Geographies and the Politics of Place*. Cambridge, Mass: South End Press, pp.46–81.
- Worst A (2011) *Ostprodukte im Westregal. Geschäfte mit der DDR*. Leipzig: Mitteldeutscher Rundfunk.
- Wynter S (1971) Novel and history, plot and plantation. *Savacou* 5(1): 95–102.