Living with others: On multispecies resurgence in the altered forest landscapes of the Anthropocene

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Abstract

Through an encounter with a plantation forest in western Denmark called Klosterheden, this article explores the possibilities for what Anna Tsing calls *multispecies resurgence* – the ability of ecologies to survive and recover through interspecies cooperation. Highlighting endangered conditions for ongoing survival in a world of Anthropocene proliferations, the article tells three entangled stories of how the forest landscapes in Klosterheden have changed in the past century: First, the story of the forest as a landscape of war. Then, the story of the forest as a landscape of multispecies companionship. And finally, the story of the forest as a landscape in between resurgence and disrepair. The overarching argument is that in an Anthropocene world altered by human activities, ongoing survival requires renewed care and attention towards the complexities of multispecies resurgence. This entails, among other things, making space for the resurgent dynamics of natural ecologies and recognizing the limits of human existence vis-à-vis other forms of earthly life.

Key words: Anthropocene, multispecies resurgence, climate change, plantation, forests

Résumé

À travers une rencontre avec une forêt de plantation dans l'ouest du Danemark appelée Klosterheden, cet article explore les possibilités de ce qu'Anna Tsing appelle la résurgence multi-espèces - la capacité des écologies à survivre et à se rétablir grâce à la coopération inter-espèces. Soulignant les conditions menacées de survie dans un monde de proliférations anthropocènes, l'article raconte trois histoires enchevêtrées sur la façon dont les paysages forestiers de Klosterheden ont changé au cours du siècle dernier : Tout d'abord, l'histoire de la forêt en tant que paysage de guerre. Ensuite, l'histoire de la forêt en tant que paysage de compagnonnage multi-espèces. Enfin, l'histoire de la forêt en tant que paysage entre résurgence et délabrement. L'argument principal est que dans un monde anthropocène modifié par les activités humaines, la survie nécessite une attention renouvelée aux complexités de la résurgence multi-espèces. Cela implique, entre autres, de faire de la place à la dynamique de résurgence des écologies naturelles et de reconnaître les limites de l'existence humaine par rapport aux autres formes de vie terrestre.

Mots-clés: Anthropocène, résurgence multi-espèce, changement climatique, plantation, forêts

Resumen

A través de un encuentro con una plantación forestal del oeste de Dinamarca llamada Klosterheden, este artículo explora las posibilidades de lo que Anna Tsing denomina resurgimiento multiespecies: la capacidad de las ecologías para sobrevivir y recuperarse mediante la cooperación entre especies. Destacando las condiciones en peligro para una supervivencia continuada en un mundo de proliferaciones antropocénicas, el artículo cuenta tres historias entrelazadas sobre cómo han cambiado los paisajes forestales de Klosterheden en el último siglo: En primer lugar, la historia del bosque como paisaje de guerra. Luego, la historia del bosque como paisaje de compañía multiespecífica. Y por último, la historia del bosque como paisaje entre el resurgimiento y el deterioro. El argumento general es que en un mundo antropoceno alterado por las actividades humanas, la

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supervivencia requiere un cuidado y una atención renovados hacia las complejidades del resurgimiento de las multiespecies. Esto implica, entre otras cosas, dejar espacio para la dinámica resurgente de las ecologías naturales y reconocer los límites de la existencia humana frente a otras formas de vida terrestre.

Palabras claves: Antropoceno, resurgencia multi-especies, cambio climático, plantación, bosques

1. Introduction

Klosterheden is a large plantation forest and heath area located near the west coast of mainland Denmark. The landscapes here have been formed by the last glacial period almost 15,000 years ago and contain mostly meager and sandy soils with little agricultural potential. Since the end of the 19th century, the area has been managed by the Danish state as a tree plantation producing timber for local industries and today, the forest is increasingly used for recreational purposes with around 200,000 human visitors each year (Danish Nature Agency, 2005, p. 3). Meanwhile, the forest is also home to many other animals, including larger mammals like beavers, foxes, badgers, and deer; birds such as ravens, ospreys, and kingfishers; fish such as pike, trout, and roach; and various insects, including the rare three-horned dung beetle.

Like forests elsewhere, the ecological well-being of Klosterheden depends on complex interspecies relations that include, but cannot be reduced to, human activities. Its ecological sustainability relies on what Anna Tsing calls multispecies *resurgence,* that is "the remaking of livable landscapes through the actions of many organisms" (Tsing, 2017a, p. 51). In short, resurgence is the ability of complex living ecologies to bounce back even after extended periods of damage or disturbance. Only in places where human ways of life have "aligned themselves with the dynamics of multispecies resurgence" have they been able to sustain themselves over time (Tsing, 2017a, p. 51). In ecologies where this capacity has been systematically undercut, "more terrible ecologies take over, threatening livability" (Tsing, 2017a, p. 51).

Human beings and their activities matter – perhaps more so than ever in the so-called Anthropocene – but humans remain one among many relevant actors.[2] If we want to prepare ourselves for the futures of environmental change to come, we will also need to know more about the many complex multispecies ecologies that other beings and organisms help sustain. In the case of forests, for example, many different species with different speeds and rhythms come together and create a "multispecies field of histories" (Tsing, 2013, p. 33). Through her own engagements with the rapidly declining Satoyama forests of Japan, Tsing's work reminds us that even small "changes in the species mix have social consequences for both humans and non-humans" (Tsing, 2013, p. 38).[3]

Like the Satoyama forests, Klosterheden in Denmark is a place of complicated and contingent multispecies histories. In what follows, I tell three different 'forest histories' from Klosterheden that reveal vital insights about the conditions of multispecies survival in the Anthropocene. First, the history of the forest as a landscape of ongoing war. Then, the history of the forest as a landscape of multispecies companionship. And lastly, the history of the forest as a landscape in between resurgence and disrepair. Weaved in between each of these three forest histories are three 'field stories' from an ethnographic encounter with the plantation forest of Klosterheden on a clear and sunny afternoon during the early-Covid-19 days in March 2020.

By combining the (natural) histories of the forest with new arts of noticing through ethnographic exploration, the article aims to make the following overarching argument. In an Anthropocene world haunted by human activities, ongoing survival requires renewed attention and care towards the complexities of multispecies resurgence that allow ecologies to bounce back even after extensive ecological damage. Enabling multispecies resurgence requires, in many cases, scaling back intensive human activities in order to make more

[2] For a more in-depth introduction to the concept of the Anthropocene, and some of its alternatives, see Lorimer (2017). Despite the many relevant critiques of the Anthropocene concept (see for example Malm and Hornborg, 2014), I stick with it ambivalently here, mainly because it has – despite its limitations – been able to foster new and interesting cross-disciplinary conversations, both inside and outside academic, in ways that most of the other terms have not yet. For a more thorough and critical discussion of the Anthropocene concept, see also my previous work (Ejsing, 2023).

[3] Interestingly for the arguments of this article, the case of the declining Satoyama forests is an example of forest ecologies changing, in part, because of human abandonment (Tsing, 2013). This is helpful to remind us that human involvement and multispecies resurgence is not always in opposition – a point I return to below.

space for other species, while recognizing the myriad and complex ecological entanglements that already exist between human beings and the many other beings that help sustain livable ecologies. Each of these elements are illustrated by the complex multispecies histories and entanglements of Klosterheden.

But before turning to Klosterheden, I want to start by saying a few words about the methodological approach undertaken in this article, and how it relates to the field of political ecology more generally.

2. An interlude on methodology: Multispecies storytelling in political ecology

The field of political ecology can be defined broadly as "a critical research field within anthropology, geography, and related disciplines that has become well known for its analyses of how and why structural forces, such as capitalist economic processes and power relations, drive environmental change in an increasingly interconnected world" (Roberts, 2020). Relying on this capacious definition, the field of political ecology intersects, at least in part, with that of environmental humanities and its increasing interest in what we might call multispecies studies (Van Dooren, Kirksey & Münster, 2016). In this *Journal*, too, a multispecies perspective has been used to investigate and theorize complex phenomena like viral pandemics (Fernando, 2020) and commercialized agriculture (Aldeia, 2022).

This article adds to and extends these conversations within political ecology by bringing our attention to another kind of multispecies landscapes, forests, whose thriving is crucial for the survival of both human beings and many other species, but also severely threatened due to many of the underlying structural forces of the Anthropocene and its ecological crises. At the same time, however, the article is also an attempt to tell a different *kind* of story about these ongoing crises. The kind of stories aimed at telling "a fleshier, more lively truth that in its telling might draw us all into a greater sense of accountability," as Thom Van Dooren writes in his own work about the human-nonhuman entanglements of animal extinction (Van Dooren, 2014, pp. 9-10).

In combining a series of ethnographic 'field stories' with larger 'forest histories' from a specific place on the Danish west coast, I am taking a cue from Haraway's suggestion that situated storytelling is a way of exercising our capacities for caring, and that different kinds of stories can help cultivate new and different kinds of response-abilities (Haraway, 2015, p. 29). Grand narratives such as those suggested by concepts like the Anthropocene (or the Capitalocene) are important, which is why I return to them throughout the article. But these narratives are also constantly on the brink of becoming too-large and too-abstract to think with in their tendency to brush over situated differences (Haraway, 2015, p. 50). By placing them alongside a series of smaller stories from a specific site, the forest of Klosterheden on the Danish west coast, the hope is that some of these situated stories can help us see, perhaps even feel, in a different way some of the many intricate multispecies relations and nonhuman beings that also matter to the ongoing unfolding of life on this planet.

As Tsing writes in *The mushroom at the end of the world*: "…if a rush of troubled stories is the best way to tell about contaminated diversity, then it's time to make that rush part of our knowledge practices" (Tsing, 2017b, p. 34). The argument here is not that telling a rush of troubled stories is a superior way of doing political ecology. Rather, it is an attempt to pluralize and expand the range of possible ways one might go about studying the complexities of multispecies ecologies in the Anthropocene – in the hope that it might, in turn, produce different responses, affects, and effects.

With this in mind, I want to invite the reader on a journey, one that takes us to a small rural town on the Danish west coast and back to March 2020, just around the time that news of coronavirus began spreading rapidly across the European continent.

3. Field story I: Encountering the forest

About a week ago, the Danish Prime Minister went on national television to declare a society-wide lockdown due to the novel coronavirus. As I watched the press conference alone in my temporary apartment on the west coast of Denmark, I suddenly felt very far from home. The timing could hardly have been worse, as I am in the middle of doing fieldwork for my dissertation. Viruses are never timely, I suppose. In a way, however, the arrival of this new virus does seem oddly appropriate for our Anthropocene times: the continued and

relentless human destruction of natural ecologies around the world was always bound to come back to us in unforgiving ways.

I have not interacted with another human being since the press conference, except for one time I went to the grocery store. Instead, I have started reading the news from Northern Italy, where they have been struggling with the virus for a while, and I am slowly beginning to sense the gravity of the situation. This will not blow over anytime soon. To help take my mind off things, I have decided to take a trip out to a nearby forest area, Klosterheden, to go for a stroll in nature.

The forest is less than 10 kilometers away, so I go there by bike. As per usual, I have forgotten how windy the open coastal landscapes are, and I am struggling to keep momentum going on my bike. There are also no bike paths on the road leading out of Lemvig, so large industry trucks pass me at alarming speeds. When I reach the north-western corner of the forest, I turn left off the main road. Suddenly, next to the road, are piles after piles of old fishing nets in all kinds of vibrant blue and golden colors (Figure 1). It looks like a scene from one of the human-altered landscapes in the photographer Edward Burtansky's Anthropocene series.[4]

This must be the home of Plastix, a local company that upcycles old and used fishing nets that would otherwise have ended up in the oceans into new and reusable 'green plastic'. An example of green capitalism in all its poetical motion: a human-made problem turned into a marketable product.

Figure 1: Pile of old fishing nets. Source: Author.

I make another right and turn onto the gravel road leading into Klosterheden. Large fir trees are towering on each side of the road, guiding me deeper into the forest (Figure 2). About a kilometer down, I get off my bike and walk around among the trees.

[4] See https://www.edwardburtynsky.com/projects/the-anthropocene-project.

Figure 2: Main road leading into Klosterheden. Source: Author.

The more time I spend with the trees, the more I begin to notice. What first appeared like a wild and unmanaged forest is starting to look like something else with its neatly ordered rows of trees. Then I remember: Klosterheden is a plantation. The trees around me have been planted by humans. When I look closer, the signs are obvious. In between a large section of trees, there is an entire row of trees missing, only the stumps are left (Figure 3).

On my way back to the bike, I notice that I have parked right next to a set of dirt tracks left by heavy machinery (Figure 4). They look almost like scars in the forest landscape.

Figure 3: Lines of tree stumps. Source: Author

Figure 4: Dirt tracks. Source: Author.

4. Forest history I: A landscape of war

The history of the landscapes in Klosterheden is a history full of war. In the north-western corner of Klosterheden lies an old aerodrome that housed several thousand German refugees after the Second World War. The Rom camp, as it was called, existed between 1945 and 1948 and at its peak housed around 9,000 refugees – primarily women, children, and elderly from eastern Germany – almost twice the amount of people living in Lemvig at the time (Knudsen, 2014, p. 5).

The decision to house refugees at the aerodrome in Rom was originally made by the occupying powers, but when the Germans capitulated in May 1945, the Danish authorities took over responsibility for the camp. The initial objective was straightforward: to get rid of the refugees as soon as possible. But that task quickly turned out to be more difficult than first anticipated, because the post-war refugees had nowhere to go. Germany was in ruins. Instead, all contact between the refugees at the camp and the Danes living nearby was criminalized to prevent any lasting bonds from emerging. Neither the Danish authorities nor the refugees were particularly happy about the situation. In 1946, one of the German refugees described the situation to a local newspaper: "Like the Danes are unwilling hosts, we are unwilling guests" (Knudsen, 2014, pp. 71–72).

The story of the German refugees in the Rom camp after the Second World War is a hidden and often downplayed part of Denmark's troubled past. Today, there are no visible remnants left except the old aerodrome, which was used by the German forces during the war. As the historian Inger Bjørn Knudsen writes, the story of the refugee camp at the edge of Klosterheden raises a thorny question: "Did the Danish authorities treat the refugees of war in a humanitarian and ethically defensible manner?" (Knudsen, 2014, p. 5). This is a question that echoes all the way up to the present moment, especially in the wake of the 2015 European refugee crisis, where Denmark was among the first countries to effectively close its borders.[5] In light of the ongoing climate and ecological crises and the futures yet-to-come, where there will be many more climate-related refugees, the question of how to show solidarity with human others, especially in times of crisis, is only going to become more pertinent.[6]

Klosterheden is also home to another story of war, but of a different kind. One led not only against human others, but against many multispecies others and their natural environments.[7] Although ongoing survival depends on many of these ecologies, humans in the form of capitalist elites have systematically waged war against them in the name of profit.[8] One of the instruments of this war are so-called *plantation* ecologies, which refer to "simplified ecologies designed to create assets for future investments and … kill off beings that are not recognized as assets" (Tsing, 2017a, pp. 51–52). In the plantation, complex organisms are simplified and standardized in order to increase the speed of reproduction and make them fit the rhythms of the market. By removing individual organisms – such as a single species of grain or tree – from their native ecologies, plantations seek to turn organisms into manageable resources. Through this process of simplification and removal, the very conditions of multispecies resurgence are systematically undercut.[9]

But it gets worse. Not only does the plantation model undercut multispecies resurgence, it actively cultivates conditions for what Tsing calls unintended or 'feral' *proliferations*, which include "the unmanageable spread of plantation-augmented life in the form of disease and pollution" (Tsing, 2017a, p. 52; see also Tsing, Mathews & Bubandt, 2019). It is worth noting here that what Tsing calls ferality is not in itself inherently problematic, but refers more descriptively to "anthropogenic landscapes set in motion not just by the intentions of human engineers but also by the cascading effects of more-than-human negotiations" (Tsing & Bubandt,

[5] For example, by authorizing border police to seize valuables up to US$1,450 from incoming refugees, reducing integration benefits, and extending the period needed before applying for family members to be reunited from 1 to 3 years.

[6] The exact number of projected refugees due to climate change is hotly debated, in part due to the difficulties of defining exactly what counts as climate refugees (see for example Ferris, 2020). However, it is certain that an increasingly unstable ecological world will produce a significant displacement of many human, as well as nonhuman, populations.

[7] As one of the reviewers of this article pointed out, the concept of 'war' might not even be sufficient to do justice to the ongoing and relentless domination and extermination of myriad nonhuman species. In a war, at least, there seems to be an ontological recognition of the other as the enemy.

[8] See for example recent eco-Marxist scholarship, such as John Bellamy Foster's work on 'ecological rifts' (Foster, Clark, & York 2011; Foster 2016) and Jason W. Moore's work on 'cheap natures' (Moore 2015; 2016; Patel & Moore 2017).

[9] Many of these plantation dynamics have become so widespread today that Tsing, Haraway, and others have started talking about the 'Plantationocene' as a potential alternative to the Anthropocene as a name for our current geological epoch. See, for example, Mitman (2019).

2018, p. 1). In this view, multispecies resurgence can itself be seen as a form of feral capacity to produce cascading effects that allow for ecologies to bounce back even in the face of extensive (human) damage. [10]

However, due to their ecological simplifications, the plantation ecologies of the Anthropocene tend to create feral proliferations of a much more sinister kind, such as when they become "incubators … for pests and diseases, including fungal pathogens" (Tsing, 2017a, p. 59). As an example, Tsing offers the case of ash dieback: in recent years, a deadly and seemingly unstoppable fungus has spread across the European continent to the point where Europe might eventually lose all its ash trees. How? In short, because of a contemporary tree nursery trade that ships hundreds of thousands of young trees, soils, and microorganisms across the world for plantation purposes. The global nursery trade provides new opportunities for "fungal pathogens to meet close relations from other regions and discover new prey," and in these encounters, new virulent forms are produced, some of which turn out to be disastrous (Tsing, 2017a, p. 59).

Trees and plants have always been attacked by occasional pathogens, but the accelerated speed and intensity of the industrialized plantation model is rapidly changing the rules of the game. When processes of disease proliferation happen at a more natural pace, landscapes eventually adapt and recover, and over time pathogens become less effective. In the plantation, however, where new and identical bodies are constantly supplied in a capitalist pursuit if profit, deadly pathogens proliferate and refuse to slow down. As new markets spread and speed up, so do their ecological ramifications (Tsing, 2017a, p. 60).

Meanwhile, ash dieback is not just a catastrophe for the trees themselves, but also for the many lifeforms they enable. Ash trees are great ecological collaborators, which is why when they die, so do many other species, including "insects, lichens, fungi, mollusks, and birds" (Tsing, 2017a, p. 58). This then is another central feature of plantation dynamics: as their detrimental ecological effects begin to materialize, they produce cascading effects that ripple throughout all their interconnected ecological assemblages. When the world turns into a plantation, multispecies resurgence is systematically undercut, and so are the ecological conditions of livability for many species on this planet.

Klosterheden, too, is part of this long history of human beings waging war against more-than-human ecologies in the name of profit. From around 1880, the Danish state began acquiring large parts of the heath landscape in the area and gradually turned it into a plantation forest with the purpose of creating jobs and producing timber for local industries (Danish Nature Agency, 2005, p. 14). In the beginning, mostly pine trees were planted, later came spruce and fir. Over the next half a century the plantation forest expanded, while the diverse and plant-rich heath landscapes started to recede, and with it followed the disappearance of other species, such as the beautiful Black Grouse (Lyrurus tetrix), which has never returned to Danish landscapes. By the end of the 1960s, the heath landscapes had almost completely disappeared (Danish Nature Agency, 2005, pp. 16–17). Then, on a hot and dry summer day in 1968, something strange happened:

> Suddenly, as if by divine intervention, a fire broke out in the middle of the plantation. Because of the dry conditions, the fire spread rapidly and burned down an area of more than 250 hectares of planted forest. The fire kept ravaging for hours until, eventually, the build-up of intense heat produced a local thunderstorm. Almost as quickly as it had begun, the fire was over. Nature had done its job, and the heath was saved. (Danish Nature Agency, 2005, p. 17, author translation)

The area that burned that day was never replanted, and today it makes up one of the biggest heath landscapes in Klosterheden (Danish Nature Agency, 2005, p. 17). From 1971 and onwards, the official management guidelines for the forest have included a section on the value of preserving diverse natural landscapes, and a large section of the forest's heath landscapes have been listed as protected (Danish Nature Agency, 2005, p. 18). However, Klosterheden is still run as a plantation, and the signs of human management

[10] For more on the concept of ferality, see also the fascinating collaborative research project 'Feral Atlas' available at https://feralatlas.org.

remain visible throughout. A satellite view from above reveals the orderly distribution of the forest into square-like sections of managed trees (Figure 5).

Figure 3: Satellite view of Klosterheden. Source: Map data © Google 2022.

In recent years, however, the plantation has gradually moved towards a more multispecies type of management. In the official document outlining the management strategy from 2004, the national Danish Nature Agency writes that the area is on the brink of a transformation "from plantation to forest" and that they consider Klosterheden a "near nature" plantation (Danish Nature Agency, 2005, p. 20). The motivation behind this transformation is not only a matter of values shifting towards nature protection and conservation in recent decades, but also a matter of business: "The incentives are clear," according to the agency. A more varied vegetation can help secure the "quality, stability and health" of the forest and its trees (Danish Nature Agency 2005, 20). Challenging any simple distinctions between "managed" and "wild" natural landscape, even plantation managers are beginning to realize that multispecies resurgence is not only good for the forest, but also good for running a sustainable business in the ecological sector.

5. Field story II: Noticing the forest

I continue down the gravel road for another kilometer or so before I reach my main destination: Møllesøen. The beautiful lake in the middle of Klosterheden is named after an old corn mill that burned down in 1889, but can be dated back to the early 15th century (Figure 6). The area around the lake is listed as protected and is home to rich and varied animal life. If you are lucky, you might spot one of the beavers (Castor fiber) that were set free here around the early 2000s in order to improve the forest ecologies of Klosterheden.

No beavers are in sight today, and I decide to go for a hike around the lake. The fresh air and the calming sounds of the forest feel regenerative. I have the path mostly to myself, and as I walk, the rays from the sun fall between the trees and light up the forest floor in the most beautiful, diffractive patterns of green, gold, and brown (Figure 7).

I am reminded of all the incredible beings that live here, whose intertwined relations make up the more-than-human sociality of the forest. The birds fill the forest with their songs and help new trees survive by dispersing their seedlings, burying them in the ground as future food stocks. The fungal networks have intricate underground webs which connect the forest's vegetation and facilitate the transfer of water, energy, sugars, and various types of information needed for their mutual survival. Then there are the trees themselves, these remarkable long-lasting creatures, who turn sunlight and carbon dioxide into energy and oxygen, communicate

via electrical impulses and chemical signals, and unlike our ephemeral human selves can stay put in the same place for centuries, sometimes even millennia.

Figure 4: The lake Møllesøen. Source: Author.

Figure 5*:* Sunlight falling between trees. Source: Author.

On my way back from the lake, a father and his child pass me by on mountain bikes. They are going fast and seem to be having fun. There are other people here too, who have come to enjoy the serenity of the lake. An older couple, smiling and holding hands. Seeing them reminds me of a conversation I had recently with the ranger in the area, Jens, who told me that some of the locals are afraid to go for a walk in Klosterheden now that the gray wolf (Canis lupus) has returned. Not long ago, one was spotted just around these parts of the forest. In Klosterheden, as in many other places in northern Europe where the gray wolf has returned in recent years, the renewed presence of this mythical animal raises an important question: who is the forest for?

6. Forest history II: A landscape of multispecies companionship

If the Anthropocene is an epoch in which conditions for multispecies resurgence are systematically undercut, we might think of the Holocene, in contrast, as an epoch in which human beings and their activities

managed to co-exist with other living beings. For thousands of years, even if humans temporarily overworked their surrounding landscapes by exhausting soils and cutting back forests, these natural landscapes would, when later abandoned, usually recover over time. In the Holocene, as Tsing writes, "every time farms were abandoned, forests took back the land" (Tsing, 2017a, p. 54). What is happening in many places today, however, is that more and more natural landscapes and their ecosystems are being pushed beyond their points of resurgence and towards new equilibria with different, often impoverished, conditions for multispecies life.

It is not all game over yet, however, and the situation is not as simple as the Anthropocene-Holocene dichotomy suggests. Many landscapes of multispecies resurgence still exist, and their continued survival depends on ongoing collaboration between many different species. Some species, like the ash trees above, are better at sustaining multispecies life than others. They are what we might call good *companion species*.[11] One of Tsing's examples of a good companion species is Matsutake mushrooms. Not only do Matsutake help trees grow even in landscapes ruined by human activities, but they consistently defy human attempts to grow them in controlled laboratory settings. They are both good companions and anti-plantation at same time.

There are no Matsutake in the Klosterheden, but there are many other interesting companion species. One of them is the beaver. Beavers have previously been absent from Danish landscapes for more than two thousand years after being hunted to extinction during the late Bronze Age because of their meat and fur. In 1999, however, eighteen beavers from northern Germany were re-introduced to the forests of Klosterheden, and today more than two hundred beavers live in the extended area. This is a familiar pattern: after beavers were hunted to the brink of extinction, populations have rebounded in many places during the last century due to intentional conservation efforts. Although populations remain a fraction of their historic levels, they are one of the most successful stories of the modern conservation movement (Goldfarb, 2018).

Since their re-introduction in Klosterheden, however, the presence of beavers has continuously created tensions with nearby human communities. The first conflict arrived within the first month: a small group of private willow trees had been smashed to smithereens overnight, almost 20km from where the beavers had initially been released. This was only the beginning, and between 2005 and 2020, the compensations for damage done to private property by beavers rose from around DKK180,000 to DKK1,000,000 (US$25,000 to US$150,000), while the number of individual cases has reached around 80 a year (Nielsen, 2021). If anyone thought these critters had any intentions of being told what to do or where to be, they were wrong.

Beavers, like other species, have a life of their own that persistently refuses to bend their desires to human whims. Seen from the perspective of the forest's multispecies ecologies, however, beavers are far from a nuisance. Beavers tend to make a mess of neatly ordered forests, thereby opening up landscapes to more diverse vegetation and wildlife. Environmentalist journalist Ben Goldfarb describes beavers as ecological Swiss army knives capable of "tackling just about any landscape-scale problem you might confront" (Goldfarb, 2018, p. 22). They are, in other words, great companion species, and local ecologists agree that they have improved the biological diversity of Klosterheden's forests (Nielsen, 2021).

Why, then, is it so difficult for humans to live with the beaver? Occasional damage to private property is an important factor, but is this sporadic nuisance sufficient to understand the passionate opposition some people show towards these animals? Or could it, as Goldfarb suggests, have something to do with the animal's utter disregard for human desires of control and order? In their role as ecosystem managers, beavers "create apparent chaos: jumbles of downed trees, riotous streamside vegetation, creeks that jump their banks with abandon" (Goldfarb, 2018, p. 20). Despite the immediate disarray to the human eye, these wild and chaotic forest landscapes sustain the "profusion of life-supporting habitats that benefit nearly everything that crawls, walk, flies, and swims" (Goldfarb, 2018, p. 20). This odd trait is part of the reason why the beaver has become an important image for the rewilding movement today: They not only help rebuild damaged natural landscapes, they also challenge human-centric desires for order and control while reminding us that landscapes, such as forests, are home to many other multispecies worlds.

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[11] The original concept is Haraway's. She develops it in *The companion species manifesto* (2003), which takes as its starting point the relationship between herself and her dog Cayenne. In the context of this article, however, I am using the concept more narrowly to highlight the ways in which some species are so-called "good" companion species, meaning that they are particularly well-equipped to sustain other forms of multispecies life.

The story of the beavers in Klosterheden resonates with the recent history of another controversial animal here, namely the Eurasian gray wolf. Like the beaver, the gray wolf has recently returned to Denmark's rural landscapes. In contrast to the beaver, however, it did so on its own accord, traveling up from northern Germany at the end of 2012 (Danish Nature Agency, 2014). Since then, at least 11 wolves have been identified. In Klosterheden they have been spotted occasionally, and since February 2021 a male wolf identified as 'GW1430' seems to have made the forest area its long-term habitat (Lundsgaard, 2020).

The gray wolf, like the beaver, is a great companion species and ecosystem manager. Because of their role as apex predators, wolves play important roles in regulating the interactions between plants, plant-eaters, and medium-sized predators (Danish Nature Agency, 2014, p. 12). A striking and oft-cited example of this is from Yellowstone National Park in the US, where wolves were reintroduced in the mid-1990s. The wolves' presence changed the dynamics of other animals, in particular grazing deer, and in turn changed the whole ecosystem of the park and produced what is sometimes called trophic cascades: old trees grew back in places that had hitherto been overgrazed by the deer, and the diversity of animal life proliferated. This included beavers, who helped extend the ecological effects further. Even rivers benefited from the presence of wolves, because the new trees helped solidify their banks and prevent erosion.

Despite their potential ecological benefit to multispecies life, however, wolves, like beavers, routinely come into conflicts with humans and often produce fierce, sometimes even violent, opposition. A primary source of conflict is related to one of the wolf's basic instincts: it kills other animals. Some of the common anti-wolf arguments are that wolves habitually impinge upon human property by attacking farm animals or by reducing relevant hunting game (Danish Nature Agency, 2014, p. 19). In Denmark, a member of the parliament for the center-liberal party, Venstre, formulated his opposition to the gray wolf in a particularly striking way: "We use a lot of resources on building wolf fences, when the problem could be fixed with a few grams of lead" (Kamstrup, 2018). He later had to backtrack on the statement, and on that occasion modified his position to: "In conflicts between wolves and humans, we side with humans" (Markussen, 2018).

But how much damage do wolves actually do to human property? Based on experiences from other countries in Europe, estimates suggest that a single gray wolf kills on average 1-2 free-ranging farm animals like sheep and goats each year, and that as soon as effective prevention measures are installed, numbers drop drastically (Danish Nature Agency, 2014, p. 24). The costs to private property incurred by these attacks are usually subject to public compensation in Denmark, and the total expenses varying somewhere between US$200 and US$1,000 per wolf per year (Danish Nature Agency, 2014, p. 4). In aggregate economic costs, then, farm animals being killed by wolves are negligible. When it comes to hunting game, recent studies also suggest that wolves have limited impact on the populations of hunted animals, such as deer, since they tend to mostly kill very young, old, or weak individuals (Danish Nature Agency, 2014, p. 25).

Another source of conflict is the fear of wolves attacking humans. As mentioned above, the local ranger knew of people who feared the wolf. While Jens believes this fear should be taken seriously, he also sees it as part of his job to inform people that "it is not as dangerous as they seem to believe."[12] And he is right. In one of the most extensive studies of wolf attacks on humans, published in 2002, the authors conclude that compared with other large carnivores, the wolf is one of the "least dangerous species" for humans (Linnell *et al.,* 2002, p. 5; see also Linnell *et al*., 2021). During the twenty years leading up to the report, there had only been eight well-documented cases of non-rabid wolves attacking humans.

Nevertheless, wolves have historically posed a threat to humans, which might explain part of the persistence of what the authors call a 'cultural fear' (Linnell *et al.*, 2002, p. 5). As the term suggests, negative reactions to wolves often have to do with more than just their physical presence and the actual risk of danger (see also Marin *et al*., 2020). It is not unusual, for example, that debates about wolves and their presence become proxy debates for issues that have to do with political divisions between urban and rural communities. Surveys routinely show that people in rural areas, especially farmers and hunters, have more opposition towards the wolf than do people in the cities (Danish Nature Agency, 2014, p. 18).

[12] Personal interview with the natural ranger, Jens, at his municipality office, 29th of November 2018.

A simple explanation could be that because people in rural areas live closer to where the wolf is, they are more afraid of them (Karlsson & Sjöström 2007). But it is not that simple. Many people in the city also express fear of wolves, but the fear itself does not necessarily transfer into negative attitudes towards them. Rather, as the Danish Nature Agency writes in their official wolf management report from 2014, it seems that "the real discussion is not so much about the wolf, as it is about other and bigger questions, such as the perception ... that people in cities, far away (from the wolf), takes decision about the wolf on behalf of rural communities" (Danish Nature Agency, 2014, p. 19). The wolf thus becomes "a symbol of negative outside influence of local issues" (Linnell *et al.,* 2002, p. 6).

In other words, the reappearance of the wolf in a place like Klosterheden brings to the fore real and existing social and economic divisions between rural and urban communities. According to Jens, the national Danish debate is becoming increasingly polarized: "Either people think the wolf deserves to be shot and killed, or it needs to have its own untouched enclosure." His own experience is that "the further people get away from nature, the more they start insisting that nature is something that must be protected at all costs."[13] What is at stake in our relation to the wolf, then, is not only rural and urban divisions, but also different and competing conceptions of nature: must nature stay 'untouched' and 'be protected at all costs,' or should it be managed in accordance with human needs and desires?

That question might not, however, be the right one to ask. In a recent talk, John Linnell, one of the world's leading experts on wolf-human relations, distinguishes between three different types of questions posed by the presence of wolves.[14] The first is the ecological question: can wolves live with humans? Although this has not always been the case, ongoing conservation efforts have made it increasingly evident that wolves can make a life alongside humans. In light of this development, a second question arises: can humans live with the wolf? As suggested, this question has turned out to be a remarkably difficult one in many societies, particularly in the context of political divisions between rural and urban communities. But maybe the real question for multispecies relations in the Anthropocene is another one, which Linnell calls the question of co-existence: how can humans and wolves learn to live with each other?

Answering this third question requires ongoing negotiations and compromises between particular human beings and their four-legged counterparts. In many places, it amounts to a whole new conversation. In a country like Denmark, for example, where more than two-thirds of the land is cultivated for agricultural purposes, people are not used to making compromises with or having to limit themselves on behalf of nature and other animals. Whether it is coastal erosion threatening their summer houses, or wild animals threatening their property, people still expect natural forces to bend according to their whims and desires.

In a relatively recent survey, less than a third of the respondents thought that "the wolf, as a species, has a right to exist in Denmark" (Danish Nature Agency, 2014, p. 21). While this might seem problematic in itself, so does the premise of the question. After all, the choice raised by the renewed presence of 'problematic' species like the beavers or the wolves of Klosterheden is not a binary choice between a right to exist without human interference or the complete removal of a species. Here, Linnell and Jens agree: multispecies co-existence is about finding new ways of living-with and alongside each other. Both beavers and wolves provide important functions for the ecosystems of which they are a part. It is about time that we humans, too, become better at making space for nonhuman others and begin cultivating our own capacities for multispecies companionship.

7. Field story III: Abandoning the forest

On my way out of the forest, I make a final stop. Leaving the tracks for a bit, I quickly reach a darker, denser section of the forest. It is chillier here, where the trees block the sunlight and the moistness from the ground cools the air. I am starting to lose my sense of orientation, no longer certain which direction I parked my bike in.

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[13] Personal interview with the natural ranger, Jens, at his municipality office, November 29th, 2018.

[14] The webinar entitled "The recovery of large carnivores in Norway" was hosted by the Oslo School of Environmental Humanities on April 14th, 2021.

I am surrounded by trees, these odd creatures that I encounter every day, but rarely pay much attention to. I know I cannot live without trees, yet I know very little about them. I have once read that even tree experts are not exactly sure how trees get the water from the ground up through their roots and all the way up into their highest branches. Available scientific explanations, such as capillarity, transpiration, and osmosis, only take the water and our knowledge so far. The final distance remains a mystery. Trees, even in their most mundane everyday activities, challenge our human desires for scientific knowability. They are full of hidden stories.

Figure 6*:* Dense section of trees. Source: Author.

Amidst the darkness of the forest, an image comes to my mind which I saw the other day while reading about Klosterheden (Figure 9). It is a photo from a wildfire in 2013, which began with a wood-chipping machine catching fire (Figure 10). In the photo, two firefighters are trying to put out the fire. The air is thick with smoke, and all you can see are burned branches on the forest floor, one firefighter in front, and another in the background almost disappearing into the smoky orange haze. It looks like an odd post-apocalyptic landscape.

Figure 7: Firefighters surrounded by smoke. Source: Morten Stricker, JFM.

Figure 8: Burnt wood-chipping machine. Source: Morten Stricker, JFM.

The memory of that image takes me even further back, to a few years earlier, during the Californian wildfires of 2018. A video of a father and his son comes to mind, caught inside their car in a wildfire, only narrowly escaping death. I remember watching it while sitting alone in my university office in Copenhagen and suddenly feeling the full, gut-wrenching weight of it all. On a clear spring day like today, forests are magnificent places of human rest and relaxation that provide home to many wondrous multispecies worlds. But many forests around the world today are also, and increasingly due to their ongoing entanglements with human beings, turning into horrifying places of fiery ruin.

I am beginning to feel cold, so I start walking back in the direction I came from. After a while the sunlight returns and the air heats up anew. When I finally reach the gravel road, I spot my bike parked a little further down the road.

On my way out of the forest, I pass by the older couple again. They look calm and happy as they walk, still holding hands. Then I am overtaken again by the father and his son on their mountain bikes. They race each other to the car. The little boy gives his absolute all, but with the longer and more powerful strides, his father beats him effortlessly.

8. Forest history III: A landscape between resurgence and disrepair

Humans cannot live without trees. Nevertheless, many trees around the globe today are under threat because of human activities. Some species, like the ash, are threatened by new and rapidly proliferating pathogens. Others, like the trees of the rainforest, are in danger because of industrial farming and relentless clear-cutting. One threat in particular is becoming more and more apparent today: fire. In an increasingly warmer world, wildfires are spreading across like ... wildfire (Ferguson, 2017; Mathews, 2020).[15]

Despite their apparent horror, the ecological complexities of fire-forest relationships are interesting to think with, because even though wildfires can, and often have, fatal consequences for many kinds of multispecies life, fire is not always a bad thing for a forest. Through ages, fire management or burning has been used across many cultures to actively renew local ecosystems (Lake *et al*., 2017).[16] This has been the case in Klosterheden too. Before the advance of modern technology, its meagre and sandy soils were not suited for continual farming. Therefore, when the land had been cultivated for four to six years in a row, it needed several years to recover. Farmers would then plough the ground and set the heath on fire, which helped replenish the soil's nutrients. When the landscapes had been left uncultivated for several years, the process could be repeated (Danish Nature Agency, n.d. a).

[15] As Mathews (2020) points out, the number of wildfires is not unprecedented in a historical perspective, but after a century with very few fires, most of today's forests are entirely unprepared for the intense fires of a warmer world.

[16] For a broader cultural history of fire, including the ways it has been used in forest and land management, see Pyne (2019, chapter 3 & 4).

The more recent history of Klosterheden also entails an ongoing relationship with fire. As mentioned above, a spontaneous wildfire saved much of the heath landscapes back in 1968, and in 2013 the forest was hit by another large wildfire. In the latter case, the cause of the fire was distinctly human: the defunct wood-chipping machine pictured in Figure 10. After considerable fire-fighting efforts, that fire was eventually brought under control without any major human costs. Again, not unlike in 1968, the verdict from the Danish Nature Agency was unequivocal: the fire strengthened the diversity of forest and its animal and plant life. The fire had mostly cleared out old timber and thereby provided space for a more varied vegetation, which in the long run would improve the life of the forest (Danish Nature Agency, n.d. b).

The moral of these stories is not that wildfires are always a good thing. Many wildfires, such as those recently ablaze in California, Australia, Turkey, and many other places around the world, often cause havoc and ecological disruption beyond repair – especially in a world that is growing hotter and drier by the day. Under the right conditions, however, fire is not always a fatal threat to a forest. Even in the face of repeated fires, trees and forests have historically proved incredibly resilient and been able to bounce back. Unfortunately, the conditions of this resurgence are under pressure from multiple sides today.

One of the primary culprits is global warming. A warmer world means not only more frequent fires, but also longer and more intense fires (Abatzoglou & Williams, 2016; Jolly *et al.*, 2015; Williams *et al.*, 2019). Intensity is vital when it comes to resurgence, because larger and more intense wildfires, sometimes called 'megafires', have a higher risk of damaging trees and soils in irrevocable ways, making subsequent forest recovery impossible. Moreover, rising temperatures reduce the possibility of forest recovery, because the native trees have evolved their evolutionary capacities for survival in a (colder) climate that is now disappearing. When global temperatures change gradually, as they have before in the Earth's history, forests have time to adapt, and trees and their seeds travel elsewhere, sometimes with help from companion species such as birds. When temperatures rise rapidly, as they do today, forests are unable to adapt quickly enough. Under these conditions, even a single wildfire can be the triggering event that irrevocably pushes a struggling forest beyond its ecological conditions of survival (Mathews, 2020).

Another less obvious culprit is human management of forests. In the pine forests of California, for example, a combination of human fire exclusion, logging, and replanting practices have turned previously fire-resilient forests "into dense forests with a different mix of tree species that can more easily burn at high severity" (Mathews, 2020). Efforts to suppress forest fires throughout most of the 20th century have made some forests more, not less, vulnerable to wildfires, which is sometimes called the wildfire 'paradox' (Rego *et al.,* 2010; Ingalsbee & Ingalsbee, 2017). When small and less intense fires that used to be part of a forest ecology are prevented, new trees take up the spaces in between larger ones and increase the forest's density. When trees stand closer, it is easier for fire to spread, not only horizontally, but also vertically via so-called 'ladder trees' that bring fire from the ground up into the crowns of larger trees. As a result, trying to prevent all wildfires has the tragic effect that when a fire eventually comes along that cannot be prevented, it burns much longer, more intensely, and with graver ecological consequences than if fire had been allowed to run its natural course all along.

At the same time, industrialized logging and replanting practices that focus on optimizing timber outputs have resulted in denser, more homogenous forests without any durable resistance to external threats, including fire. This is another instance of Tsing's plantation: when forest ecologies become simplified with the aim of profit, they lose their capacities for resurgence and are unable to adapt in the face of adversity. Once again, political ecology, the logics of the plantation and the climatic crises of the Anthropocene come together in aggravating and increasingly fatal ways, this time through the vector of fire.

To fight back against ecological simplifications, humans must attend to the conditions that previously allowed for multispecies landscapes to adapt and recover even in the face of threats like new pathogens and increasing wildfires. In the Californian forests, for example, reversing the current development involves at least two things: first, active and selective 'thinning' that can help reduce the density of forests by removing ladder trees and infected or dead trees. Secondly, 'prescribed burns', either by burn crews or by letting wildfires burn, can prevent larger and more violent fires from forming later. For once, fighting fire with fire seems to be working (Knapp *et al.*, 2020; Pollet & Omi, 2002; Ritchie, Skinner, & Hamilton, 2007). In California, part of

the solution to the wildfire paradox is relatively simple: let (more) fires burn. In practice, however, that is easier said than done, especially as new fires threaten human dwellings or destroy forests in irrevocable ways. Here, like in many other places, short-term desires continue to trump long-term sustainability.

In other forests around the world, the dual challenges of repair and resurgence look different. In the cooler forests of Canada, for example, sustained fire repression might be the better option, at least for now. In the still relatively temperate climate of Klosterheden, the threat of wildfires remains relatively marginal, although increasingly long and dry summers, such as the one in 2018, are slowly changing that situation. The specific challenges will look different depending on the ecological conditions of specific forests, and therefore also require different solutions.

The unmanaged forests that still exist around the world today have had to find their own ways of adapting to the coming and goings of fire, which is why they remain less vulnerable to wildfires and other external threats than human managed forests. In many places, therefore, restoring forests is going to require one thing that has proven to be remarkably difficult for humans: scaling back immediate pursuit of profit and making more space or unmanaged landscapes in order to re-cultivate their own capacities for ongoing survival through multispecies resurgence.

Unmanaged does not mean untouched, however, and many forest ecologies will continue to depend on their ongoing entanglements with human activities. In the Anthropocene, even the distinction between 'managed' and 'wild' natural landscapes is becoming increasingly porous, since there are hardly any landscapes left which have not in one way or another been affected by the influence of human beings. Here, then, is a real dilemma for our current epoch: Continue managing forests like before, and they will, quite paradoxically, see more frequent and less controllable wildfires. Withdraw completely and leave forest ecologies to themselves, and the locked-in trajectories of past failed management and rising global temperatures will run their own fatal course.

9. Concluding remarks: The making of multispecies alliances

In the Anthropocene, complete human withdrawal from natural landscapes is no longer an option, if it ever was. Human activities, and the ongoing pursuits of capitalist accumulation, have already done irrevocable damage to the planet and set into motion forces that are going to reverberate throughout its foreseeable futures. Leaving vulnerable human-managed forests alone with new pathogens and intensified wildfires is not going to cut it. Moreover, human involvement and multispecies resurgence is not opposed in any simple way, as recent examples like the re-introduction of beavers in Klosterheden suggest.

Restoring natural landscapes and their multispecies resurgence, however, is going to require careful and ongoing attention to the many nonhuman beings and forces we are sharing worlds with, and the formation of new intra- and interspecies alliances. People in particular places are going to have to start figuring out how to compose new lives together with all kinds of human and nonhuman others in landscapes that have been irreversibly affected by human activities. In California, that involves the difficult task of learning to live with fire – or getting out of its way in time. For the people living near Klosterheden, ongoing survival involves learning how to live good and meaningful lives alongside the increasingly unruly neighborly forces of a rising North Sea, together with the many farm animals already brought into human societies through factory farming, as well as the disorderly beavers and untamed wolves that shape and sustain the multispecies landscapes of the local forest.

In the end, some of the most vital questions for multispecies life in the Anthropocene and for the field of political ecology currently remain open: will enough human communities be able to give room and share space with other nonhuman species, even in cases where it goes against immediate human and capital interests? Will humans find it in themselves to respond to degraded multispecies landscapes with renewed care and begin enlisting companion species, whether it is the Matsutake or the wolf, as allies in their fight for a more sustainable world? And if they do, will it happen soon enough?

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