


SPECIAL ISSUE ARTICLE

# The global tree: Forests and the possibility of a multispecies IR

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## Abstract

Forest ecosystems are crucial to survival on Earth. This article argues that trees and forests are both vital components of a healthy Earth system and productive examples for expanding International Relations' disciplinary boundaries. The article discusses the forest in three contexts: the global, the (post)colonial, and from the tree itself. From tree planting as a practice of social and environmental justice, to post-colonial and Indigenous science and knowledge, to the mycorrhizal 'wood wide web', a focus on trees, forests, and biosphere opens the possibility for a multispecies IR. Through a consideration of trees and forests in law, treaty, culture, and science at the local and global level, this article adds to a growing literature in IR that strives to bring the non-human, more-than-human, or other-than-human creatively and productively into the discipline. Foregrounding the forest's materiality and trees' symbolic power for human cultures opens important pathways to understanding how the non-human is, and should, alter and affect global politics.

**Keywords:** Ecology; Forests; International Relations Theory; Multispecies; More-Than-Human

## Introduction

I wrote in *The Microbial State: Global Thriving and the Body Politic* that International Relations (IR) 'needs a bigger vocabulary' and through this claim invited the discipline to embrace its interdisciplinary roots to better face the manifold planetary crises of the twenty-first century.<sup>1</sup> In part, the invitation relied on the fact that, historically, IR has reflected upon epistemological and methodological shifts through the so-called 'Great Debates'. A well-known tale conveyed to introductory IR classes, the Great Debates have coalesced into a series of touch points corresponding to reorientations towards Western knowledge creation in late modernity. From realism to reflectivism, these 'debates' demonstrate, beyond a dialogic history of the field, a double-sided discipline: One is ontologically rigid, closed, and resists innovation<sup>2</sup> and the other has responded to calls for revaluations and new knowledges borne from changing worlds, claims, and orders.<sup>3</sup> Perhaps best

<sup>1</sup>Stefanie R. Fishel, *The Microbial State: Global Thriving and the Body Politic* (Minneapolis, MN: University of Minnesota Press, 2017), p. 1.

<sup>2</sup>Richard Ashley, 'The poverty of neorealism', *International Organization*, 38:2 (1984), pp. 225–86.

<sup>3</sup>See 'Pluriversal relationality', *Review of International Studies*, Special Issue (forthcoming 2022); Jenny Edkins and Nick Vaughan-Williams, *Critical Theorists and International Relations* (London, UK: Routledge, 2009); Steve Smith, Ken Booth, and Marysia Zalewski, *Positivism and Beyond* (Cambridge, UK: Cambridge University Press, 1996); and Jim George, *Discourses of Global Politics: A Critical (Re)Introduction to International Relations* (Boulder, CO: Lynne Rienner Publishers, 1994).

imagined as a ‘tale of two IRs’ rather than a linear set of debates numbering one through four, a history of lively, internal scholarly exchange emerges from mainstream intellectual stasis.<sup>4</sup>

Gendered,<sup>5</sup> postcolonial,<sup>6</sup> decolonial,<sup>7</sup> and Indigenous<sup>8</sup> approaches have shown the patriarchal, imperial, and racist roots – with attendant and continued oppression through the global order – of both International Relations as a discipline and the international institutions created post-Second World War.<sup>9</sup> In turn, environmental approaches to IR have traced the ecological awareness in the discipline through international law, green theory, political economy, and institutional capacity and response to climate change and extinction.<sup>10</sup> Indeed, with a renewed focus on our dialogic genealogy, IR could be well positioned to point the field in a productive direction for a future defined by anthropogenic, planetary scale changes to the Earth system itself.

In the pendulum swing between ontological rigidity and openness, IR needs to turn its attention from the human and its institutions to engage with the Earth system and the more-than-human. As Hamlet says to Horatio, ‘there are more things in heaven and earth ... than are dreamt of in your philosophy.’ So, too, does the next debate in IR need to address that the role, demands, status, and needs of the more-than-human.<sup>11</sup> The world is ‘wondrous strange’ and many scholars in IR have responded to the challenge of engaging with a wider planetary world beyond the human.<sup>12</sup>

This article demonstrates how the tree, and the forest, can gift us the materials to build an International Relations that is more responsive to human and more-than-human communities. I build a case from the tree itself, from tree planting as a practice of social and environmental justice, to the global forest legal regime. The tree is an actant capable of solidarity and symbiosis

<sup>4</sup>Roland Bleiker, ‘Forget IR theory’, *Alternatives*, 22:1 (1997), pp. 57–85; Emmanuel Navon, ‘The “third debate” revisited’, *Review of International Studies*, 27 (2001), pp. 611–25.

<sup>5</sup>See ‘Thinking with Gender’ forum, *Review of International Studies*, 46:3 (2020); Lauren Wilcox, ‘Practising gender, queering theory’, *Review of International Studies*, 43:5 (2017); Patricia Owens, *Economy of Force* (Cambridge, UK: Cambridge, 2015); Cara Daggett, *The Birth of Energy: Fossils Fuels, Thermodynamics, and the Politics of Work* (Durham, NC: Duke University Press, 2019).

<sup>6</sup>Achille Mbembe, *On the Postcolony* (Oakland, CA: University of California Press, 2001); Siba N. Grovogui, *Beyond Eurocentrism and Anarchy: Memories of International Order and Institutions* (New York, NY: Palgrave Macmillan, 2006); Sankaran Krishna, *Globalization and Postcolonialism: Hegemony and Resistance in the Twenty-First Century* (Lanham, MD: Rowman & Littlefield, 2009); Philip Darby, *From International Relations to Relations International* (London, UK: Routledge, 2016).

<sup>7</sup>Robbie Shilliam, *Decolonizing Politics: An Introduction* (New York, NY: Polity Press, 2021).

<sup>8</sup>Jeff Corntassel, ‘Life beyond the state: Regenerating Indigenous international relations and everyday challenges to settler colonialism’, *Anarchist Developments in Cultural Studies*, 1 (2021); Sheryl Lightfoot, *Global Indigenous Politics: A Subtle Revolution* (New York, NY: Routledge, 2016); Morgan Brigg, Mary Graham, and Martin Weber, ‘Relational Indigenous systems: Aboriginal Australian political ordering and reconfiguring IR’, *Review of International Studies* (2021); Tyson Yunkaporta, *Sand Talk: How Indigenous Thinking Can Save the World* (Melbourne, Aus.: Text Publishing, 2019); Marshall Beier, *International Relations in Uncommon Places: Indigeneity, Cosmology and the Limits of International Theory* (New York, NY: Palgrave Macmillan, 2009); *Borderlands Journal, Between Ecology and Indigeneity*, 20:1 Special Issue (2021).

<sup>9</sup>Robert Vitalis, *White World Order, Black Power Politics* (Ithaca, NY: Cornell University Press, 2015); Alexander D. Barder, *Global Race War: International Politics and Racial Hierarchy* (Oxford, UK: Oxford University Press, 2021).

<sup>10</sup>Robyn Eckersley, *The Green State: Rethinking Democracy and Sovereignty* (Cambridge, MA: MIT Press, 2004); John Dryzek, *The Politics of the Earth* (Oxford, UK: Oxford University Press, 2005) and Dimitris Stevis, ‘International Relations and the study of global environmental politics: Past and present’, *Oxford Research Encyclopedia of International Studies* (New York, NY: Oxford University Press, 2017).

<sup>11</sup>I have chosen to use ‘more-than-human’ rather than ‘non-human’ to reflect the complex entanglements and connections across species. I see other-than-human and non-human as appropriate and correct terms in different contexts. See Andres Jacques, Marina Otero Verzier, and Lucia Pietroiusti, *More-than-Human* (Rotterdam: Het Nieuwe Instituut, 2020) and Sophie Chao, *In the Shadow of the Palms: More than Human Becomings in West Papua* (Durham, NC: Duke University Press, 2022).

<sup>12</sup>Fishel, *Microbial State*; Joana Pereira and Andreas Saramago (eds), *Non-Human Nature in World Politics: Theory and Practice* (Cham: Springer Link, 2020); Rafi Youatt, *Interspecies Politics: Nature, Borders, States* (Ann Arbor, MI: University of Michigan Press, 2020).

with multiple other beings in the forest and must never, to use the Kantian imperative, be used as a means to an end but always as an end unto itself. Trees are the lungs of the planet, and, to gently anthropomorphise, have capacious hearts. They care for their young and many other species in the forest. The tree and their forests challenge us to imagine a world that includes the more-than-human, politically and ethically.

Analytically, the path to the forest begins with a discussion of the Anthropocene and the more-than-human in philosophy. The first section uses the Anthropocene to productively frame the ways in which a human-centred viewpoint can also point in new directions, both epistemologically and ontologically. If humans have arrived at this epoch through the exclusion and misuse of the non-human and planetary matter, the Anthropocene is an excellent cautionary tale for living otherwise on the planet. The article then discusses the forest in three contexts: the global, the (post)colonial, and the tree itself. It then engages/turns to International Relations for a productive retelling of the ‘Three Worlds, One Planet’ debate to interrogate and challenge the structure of international politics – its institutions, legal instruments, and governance mechanisms – for the good of planetary global community in collaboration with the more-than-human. The remaining sections investigate trees and forests as both a vital and active component of any hope for future climate stability and as an exemplar for expanding IR’s disciplinary and theoretical boundaries.

The article argues that trees, and their forest ecosystems, play keystone roles in planetary climate health and, through their interconnections between and among species, can serve as guides for healthier human communities. They are thus crucial to the survival of life on planet Earth and must be understood as a major site of crisis and possibility as we push deeper into the Anthropocene. Trees flourish in symbiotic communities that extend from the smallest ecosystems to the biosphere itself, provide homes for millions of species, change the composition of the atmosphere, and mitigate global heating and climatic change. Every singular tree and patch of forest is simultaneously part of a global tree.

The chilling backdrop for this article is pending climate collapse. Earth system tipping points – such as the West Antarctic ice sheet, Atlantic circulation, and the Amazon rainforest – provide an urgent context for the challenge of systemic change able to mitigate and adapt to the consequences of human interference in the Earth system. The time needed to intervene is nearing zero and a global cascade of tipping points reveals a clear emergency: a less habitable hothouse planet that could cause a global tipping point.<sup>13</sup> The threat of exceeding these tipping points is acute and demands urgent, emergency climate action. As this article will demonstrate, an embedded local approach to forest governance must be melded with a global legal protection for forests to ameliorate the worst effects of climate change for both the tree and the human.

### The Anthropocene and the more-than human

International Relations is an anthropocentric discipline but one that is sensitive to power relations, and it often theorises how and why systems transform. The study and practice of IR has certainly shown that development, justice, and opportunity, and safe, healthy, and peaceful environments, to name but a few examples, are experienced unevenly and unequally. IR scholars know very well that not all humans are equally represented in the system and therefore all humans cannot be taken equally to task for the climate change crisis and ecological collapse.<sup>14</sup> This sensitivity to uneven power relations and attention to transformation are also crucial elements in becoming attentive to the more-than-human. The discipline is beginning to sense that there is more than the human in need of attention and response at the global level. We are only one species among an estimated 8.7 million others.

<sup>13</sup>Timothy Lenton, Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, Will Steffen, and Hans Joachim Schellnhuber, ‘Climate tipping points: Too risky to bet against’, *Nature*, 575 (28 November 2019), p. 594.

<sup>14</sup>Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minneapolis, MN: University of Minnesota Press, 2018).

It is a fact, regardless of which people or systems are at fault, that the Anthropocene, defined as an epoch named after humanity's ability to transform global Earth systems, has serious repercussions for all humans *and* the beings that share the Earth with them. It challenges us to foreground human relations with non-human lives and forces, and with the active power of the non-human as such.<sup>15</sup> For disciplinary purposes, the Anthropocene is a shorthand term for profound failures in distributive justice and the ensuing inhumanities that follow.<sup>16</sup>

It is also the case that a singular focus on the human individual and its institutions does not always help in understanding the threats and determining the best responses to the issues at the heart of the epoch: dangerous climate change including melting ice caps at both poles, extreme weather events, and rising seas, with the misuse and neglect of the Earth's biosphere at the forefront of it all. The COVID-19 pandemic is a consequence of human destruction and fragmentation of natural habitat, the abuse and murder of non-human animals, *and* a profoundly unequal global public health regime.<sup>17</sup>

While merely naming an epoch after humanity is not a complete answer for myriad issues born from humanity's power at the Earth system level, it can provoke questions about human responses towards our place in the Earth system, the things and lives to which we are bound, and our responsibility towards others. To which humans are we referring? What is the definition of the human? How does it relate to its oft-sublated binary, the non-human? How are we separate from, or connected to, our environments? The ontic question that appears is worth considering: what makes a *human* human? What is the physical reality of existence as one species among many? We must wrestle with what humanity's relation is to that which it is not. It cannot be only a negative relation – I know what I am not – but also a positive one that asks: How am I part of my world? How do these relations matter? These discussions in turn raise profound ontological issues that cannot be answered by any one disciplinary approach.

With the Anthropocene framed thusly, now attention can be turned to how the tree and forest add to reconsidering these ontological and disciplinary commitments. Boreal forests house crucial keystone species and rainforests undergird biological diversity and climate stability. Rainforests are the lungs of the planet. Trees provide innumerable resources to humans and the more-the-human, both for our survival and cultures. If the Anthropocene is taken as an opportunity for rethinking the *anthropos* and its relations with the planet's myriad systems and species in a material sense, I also posit that trees and forests can offer fruitful metaphors for global community. They prompt us to think carefully about how humans might live differently, both with each other and with other beings and ecologies.

In this spirit, I would add 'Sylvanocene' to a future list of epochs. Perhaps it could herald a hopeful turn in humanity's future – the Sylvanocene named as a time to come where forests are globally protected, understood, and valued as support for a thriving and healthy human species and millions of others in the canopy and understory. A time populated by a human who understands that the ontological, ethical, and political lines that divide human and non-human are not what we once thought them to be. To begin this hopeful vision of future filled with trees and all the species they protect and nurture besides their own, consider two theoretical understandings of the tree from philosophers who have often crossed into IR scholarship: Immanuel Kant and Gilles Deleuze and Felix Guattari. These thinkers can serve to place the tree, and more broadly the plants, in human thought, and indeed, trees have been deployed and are often misunderstood in modernist thought. There, trees and forests are examples of 'natural'

<sup>15</sup>Anthony Burke and Stefanie Fishel, 'Across species and borders: Political representation, ecological democracy and the nonhuman', in Pereira and Saramago (eds), *Non-Human Nature in World Politics*.

<sup>16</sup>Danielle Celermajer, Sria Chatterjee, Alasdair Cochrane, Stefanie Fishel, Astrida Neimanis, Anne O'Brien, Susan Reid, Krithika Srinivasan, David Schlosberg, and Anik Waldow, 'Justice through a multispecies lens', *Contemporary Political Theory*, 19:3 (2020), pp. 475–512.

<sup>17</sup>Stefanie Fishel, Andrew Fletcher, Sankaran Krishna, Utz Mcknight, Gitte du Plessis, Chad Shomura, Alicia Valdés, and Nadine Voelkner, 'Politics in the time of COVID', *Contemporary Political Theory* (2021), pp. 1–33.

competition or ossified hierarchical structures, and often plants more generally are not understood as vital or lively subjects in philosophy.

In fact, while human thought is largely ‘plant blind’, or is unable to see plants as anything but a background to human activity,<sup>18</sup> Michel Marder argues that the margins of philosophy are filled with non-animal living beings.<sup>19</sup> Humans hope to not just learn something about plants, but also to learn from them and with them.<sup>20</sup> Beyond the philosophical fecundity of plants, Stefano Mancuso writes in his *Nations of Plants*, that even if humans behave as if they are masters of the Earth, plants are the ‘only, true, and eternal planetary power’. Further, ‘without plants, animals would not exist; life itself, perhaps, would not exist on our planet and, if it did, it would be something very different.’<sup>21</sup> We exist because of plants, and ‘it behoves us to keep this idea clear at all times.’<sup>22</sup>

Modernist political thought, based as it is on a forgetting of our very material relation to plants, claims trees and forests as metaphors that illuminate the human condition. Immanuel Kant writes in the Fifth Thesis of the ‘Idea for a Universal History from a Cosmopolitan Point of View’, that opposition and conflict assigned by Nature drives humankind to attain a ‘just civic constitution’ through constraint rather than wild freedom. He uses the example of trees to illustrate his point:

It is just the same with trees in a forest, which each need the other, for in seeking to take the air and sunlight from others, each obtains a beautiful, straight shape, while those that grow in freedom and separate from one another branch out randomly and are stunted, bent, and twisted. All culture and art which adorn mankind, as well as the most beautiful social order, are fruits of unsociableness, that is forced discipline itself and thus through an imposed art to develop nature’s seed completely.<sup>23</sup>

Notably, Gilles Deleuze and Felix Guattari also reference trees in *A Thousand Plateaus: Capitalism and Schizophrenia*. Their concern is with the ‘arborescent cultures’ that Kant speaks of so positively. It is the cultures created from hierarchical understandings of power and control that have dominated human societies and led to stagnation and obstruction of social and political change. From ‘biology to linguistics’, these hierarchical forms ossify and dominate human thought. They cry: ‘We are tired of trees. We should stop believing in trees, roots, and radicles. They’ve made us suffer too much.’<sup>24</sup> For Deleuze and Guattari the rhizome (more typical of herbs and grasses) works as a philosophical concept that allows for multiple choices and points of access to knowledge. As opposed to the vertical and linear arborescent concept of the tree, the rhizome is better suited for understanding and apprehending how multiple points within a system interact. Inspiration from the rhizome can be likened to vegetal inspired pluralism: a profound respect for connections along multiple points that understands the need for these connections for survival.

As will become clear as I progress, this is more than a little unfair to the tree and the forest: they are in fact rhizomatic in their intra- and interspecies relations. Deleuze and Guattari’s hierarchical emphasis is inexact and, seen in the light of decades of research into trees and forests, sometimes quite inaccurate. I write in defence of the tree, but I also will engage with the spirit

<sup>18</sup>Sarah Elton, ‘Why we need to rethink our relationship with plants and the natural world’, *World Economic Forum*, available at: {<https://www.weforum.org/agenda/2021/11/relationships-plants-human-health/>} accessed 15 January 2022.

<sup>19</sup>Michael Marder, *Plant-Thinking: A Philosophy of Vegetal Life* (New York, NY: Columbia University Press, 2013).

<sup>20</sup>Michael Marder, ‘The place of plants: Spatiality, movement, growth’, *Performance Philosophy*, available at: {<https://www.performancephilosophy.org/journal/article/view/28/58>} accessed 21 April 2022.

<sup>21</sup>Stefano Mancuso, *Nations of Plants: A Radical Manifesto for Humans* (London, UK: Profile Books, 2021), p. 9.

<sup>22</sup>Ibid.

<sup>23</sup>Immanuel Kant, *Perpetual Peace and Other Essays* (Indianapolis, IN: Hackett Publishing Company, 1983), p. 33.

<sup>24</sup>Gilles Deleuze and Felix Guattari, *A Thousand Plateaus* (Minneapolis, MN: University of Minnesota Press, 1987), p. 15.

in which Gilles Deleuze and Felix Guattari bemoaned how ‘arborescent culture’ undergirds harmful and oppressive hierarchies in human knowledge systems and institutions. Contrary to earlier understandings of trees as competitive and solitary, a rich story has emerged filled with unlikely characters and rhizomatic, symbiotic and nurturing relations across and among species. Kant’s use of the forest as a site of competition misunderstands the deep connections between trees through the soil and the fungal and microbial systems that support a forest. As Michael Marder opined above, there is much we can learn from trees, and it is not the ‘fruits of their unsociableness’. Kant could not see the forest for the tree and Deleuze and Guattari could not see the tree for the forest. The tree is a rhizomatic, symbiotic community living in relation to its forest and that forest is a rhizomatic, symbiotic community living in relation to other forests and the biosphere. *A singular tree is also a global tree.*

### The global forest

Forest ecosystems are crucial to survival on Earth. Globally, these ‘ecosystems are diverse, adaptable, and at the core of many natural, complex, and vital processes.’<sup>25</sup> Forests are also crucial for protecting fresh water supply by increasing rainfall and lessening the impacts of floods and winds.<sup>26</sup> In 2000, the UN Millennium Ecosystem Assessment reported that forests are ‘extremely important refuges for terrestrial biodiversity, a central component of Earth’s biogeochemical systems, and a source of ecosystem services essential for human well-being.’<sup>27</sup> The report noted the staggering 40 per cent reduction in forests over the last three centuries, with three-quarters of these forests destroyed in the last two centuries. They have been completely lost in 25 countries and 29 countries have lost 90 per cent of their forest cover.<sup>28</sup> By 2019 nothing had improved. The Intergovernmental Panel on Climate Change (IPCC) released a report on climate change and response strategies that addressed the problem of deforestation, afforestation, and degradation as a driver of climate change. They wrote with a high confidence that changes in forest cover affect regional surface temperatures.<sup>29</sup>

In all, the world has lost one-third of its forest in the last 10,000 years due to human activity. Half of this loss has occurred since the beginning of the twentieth century. This loss equals eight billion hectares – or an area twice the size of the United States.<sup>30</sup> Forest loss in crucial ecosystems such as the Amazon is approaching tipping points that could help trigger catastrophic planetary system change. As argued in two *Nature* publications, the Eastern Amazon, due to combination of local burning and deforestation, is now a net source of carbon emissions rather than one of the planet’s largest sinks for carbon dioxide.<sup>31</sup> The Amazon rainforest, an ecosystem of incredible significance and one of the most iconic symbols of the life on Earth ‘is about to turn into the world’s biggest environmental disaster’.<sup>32</sup> This affects more than global climate efforts but ‘poses significant food and water security risks to countries in the region, and may lead to irreversible biodiversity loss’.<sup>33</sup>

<sup>25</sup>Anja Eikermann, *Forests in International Law: Is There Really a Need for an International Forest Convention?* (Cham: Springer Nature, 2015), p. 9.

<sup>26</sup>*Ibid.*, p. 17.

<sup>27</sup>Millennium Ecosystem Assessment, *Forest and Woodland Systems* (Washington, DC: Island Press, 2000).

<sup>28</sup>*Ibid.*

<sup>29</sup>IPCC, ‘Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems’ (2019), p. 12, available at: {<https://www.ipcc.ch/srccl/>}.

<sup>30</sup>Hannah Ritchie and Max Roser, ‘Deforestation and Forest Loss’, *Our World in Data* (2021), available at: {<https://our-worldindata.org/forests-and-deforestation>} accessed January 2022.

<sup>31</sup>Lenton et al., ‘Climate tipping points’; Luciana Gatti, Luana Basso, and John Miller, ‘Amazonia as a carbon source linked to deforestation and climate change’, *Nature*, 595 (2021), pp. 388–93.

<sup>32</sup>Graham Lawton, ‘The Amazon is turning into savannah: We have five years to save it’, *New Scientist*, available at: {<https://www.newscientist.com/article/mg25233640-800-the-amazon-is-turning-into-savannah-we-have-5-years-to-save-it/>} accessed 7 April 2022.

<sup>33</sup>Kelly Levin, David Waskow, and Rhys Gerholdt, ‘5 Big Findings from the IPCC’s 2021 Climate Report’, World Resources Institute, available at: {<https://www.wri.org/insights/ipcc-climate-report>} accessed 10 January 2022.

Tipping points like Amazon deforestation can turn our attention towards the main elements of this article: the tree and the forest and their relation to global ecosystem health. Working in a vast and malign interaction, deforestation and climate change have destabilised the Amazon, and it is now emitting more carbon than it absorbs, putting the rainforest at risk of tipping into savannah.<sup>34</sup> This alarming trend is consistent with the IPCC's 6<sup>th</sup> Assessment report, which predicts that land and ocean sinks will become net sources of carbon emissions in the latter part of the twenty-first century.<sup>35</sup>

The amount of carbon released by deforestation highlights the role of trees and forests as nature-based solutions (NBS) to climate change. Trees are capable of carbon sequestration through photosynthesis and tree growth. Photosynthesis pulls carbon out of the air, binds it in sugar, and releases oxygen; in fact, old growth forests are the best carbon capture technology to date. Melissa Kreye of Pennsylvania State University writes that a white oak tree can live for two hundred years, all the while pulling carbon out of the air and after its death the slow rotting process continues to keep carbon out of the atmosphere.<sup>36</sup>

In 2019, World Resources Institute reports that the tropics lost 11.9 million hectares of tree cover in mature rainforests that are especially important for biodiversity and carbon storage – the equivalent to ‘losing a football pitch of primary forest every 6 seconds for the entire year’ – and that the 1.8 gigatons of carbon dioxide emissions associated with this loss are equivalent to the annual emissions of 400 million cars.<sup>37</sup> With other land management options, forests and trees could provide up to 30 per cent of greenhouse gas (GHG) mitigation required by 2030.<sup>38</sup>

The primary drivers of permanent deforestation during from 2000–20 were urbanisation- and commodity-driven, with wildfires, agriculture, and forestry playing a part.<sup>39</sup> The drivers of deforestation also call attention to the varied uses that forests and ‘forest products’ serve. The decline and degradation of the world’s forests are the result of ‘complex interactions among social, policy and institutional, technological, cultural, demographic, ecological, economic, climatic, and bio-physical factors’.<sup>40</sup> Humans rely on forests, woodlands, and trees for shelter, food, furniture, medicine, paper, fuel, employment, and profit.

Growth in agriculture led to more need for trees for building materials and fortification and wood was needed to build tools and cook food. Put simply, wood has been made an essential raw material for societal growth that is grossly unsustainable and, clearly, there is correlation between population growth and loss of forests.<sup>41</sup> This puts at risk the role that forests play in providing

<sup>34</sup>Anthony Burke and Danielle Celermajer, ‘Human progress is no excuse to destroy nature: A push to make “ecocide” a global crime must recognise this fundamental truth’, *The Conversation*, available at: {<https://theconversation.com/human-progress-is-no-excuse-to-destroy-nature-a-push-to-make-ecocide-a-global-crime-must-recognise-this-fundamental-truth-164594>} accessed 20 January 2022.

<sup>35</sup>Valerie Masson-Delmotte, Panmao Zhai et al., ‘Summary for Policymakers. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change’ (2021), pp. B.4.1–B.4.3, available at: {[https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM\\_final.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf)} accessed 2 April 2021.

<sup>36</sup>Melissa Kreye, ‘How Forests Store Carbon’, Penn State Extension (24 September 2020), available at: {<https://extension.psu.edu/how-forests-store-carbon>} accessed 19 May 2021.

<sup>37</sup>Mikaela Weiss and Elizabeth Goldman, ‘We Lost a Football Pitch of Primary Rainforest Every 6 Seconds in 2019’, World Resources Institute (2 June 2020), available at: {<https://www.wri.org/insights/we-lost-football-pitch-primary-rainforest-every-6-seconds-2019>} accessed June 2020.

<sup>38</sup>United Nations Climate Change, ‘At COP25, a Call to Turn the Tide on Deforestation’ (12 December 2019), available at: {<https://unfccc.int/news/at-cop25-a-call-to-turn-the-tide-on-deforestation>} accessed June 2021.

<sup>39</sup>Global Forest Watch, from Dashboard, available at: {<https://www.globalforestwatch.org/dashboards/global/?category=forest-change&dashboardPrompts=eyJzaG93UHJvbXB0cy16dHJ1ZSwicHJvbXB0c1ZpZXdlZCI6WVYjaGFyZVdpZGdlcCJdLCJzZXRO-aW5ncy16eyJzaG93UHJvbXB0cy16dHJ1ZSwicHJvbXB0c1ZpZXdlZCI6WVYjaGFyZVdpZGdlcCJdLCJzZXROaWw>} accessed June 2021.

<sup>40</sup>Eikermann, *Forests in International Law*, p. 9.

<sup>41</sup>*Ibid.*, p. 11.

ecosystem services with their excellent carbon capture technology, safeguards for biodiversity in ecosystems, and sustenance and shelter for all sorts of more-than-human life.

Because of all their varied uses, it is politically difficult to agree on common priorities when forests are involved.<sup>42</sup> It is not surprising, then, that no comprehensive global forests conventions or treaties exist, only a complex patchwork of related international treaties and mechanisms. All three of the Rio Conventions acknowledge the importance of forests to achieve the goals of the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), and the United Nations Framework Convention on Climate Change (UNFCCC).<sup>43</sup> The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) Programme and the REDD+ Programme, a framework created by the UNFCCC to guide activities in the forest sector, were both created to reduce carbon emissions by offering incentives and pathways to invest in low-carbon sustainable development projects. REDD+ extends the incentive system by encouraging the conservation and sustainable management of forests.<sup>44</sup> The United Nations Development Program stresses the need to implement the existing REDD+ framework to reduce deforestation and raise ambition in NDCs.<sup>45</sup>

The difficulty in assessing forest ecosystem services for a more overarching treaty is a complex task and relies on loaded assumptions and pricing of natural systems. Forest ecosystems also vary on a global scale, from tropical to boreal forests, from plantations to parks.<sup>46</sup> From a resource standpoint, there are five thousand different commercial wood products and non-wood forest products like mushrooms, maple syrup, rubber, and oil and resins that play a crucial role in many economies.<sup>47</sup> These lead to multiple competing interests around forests, their protection, and their uses for human consumption. A tree centred approach only adds to the complexity: How is the intrinsic value of a tree reflected in a purely economic response?

The patchwork nature of global forestry management has further lessened the chance for global comprehensive convention.<sup>48</sup> There may be a desire for an international forest convention, but no clear way forward as different forums pursue their work largely independently from one another. Additionally, the balance between the support of local initiatives and international capacity to aid in protecting forests is important. Reducing deforestation will require efforts at all levels by engaging local communities and Indigenous peoples, women and youth, and civil society and the private sector. These should happen through a transparent framework that builds trust.<sup>49</sup>

### ***The forest in the colonies***

What becomes clear above is that the degradation, deforestation, and other threats to a forest's well-being are threats to human well-being. Forests provide a range of necessities to humans, and while international treaties and mechanisms recognise that the use of forest products must be done with local communities in the lead and in partnership with international support, a crucial step for understanding the forest and human community protection lies in acknowledging the colonial history of theft and misappropriation.

<sup>42</sup>Ibid., p. 21.

<sup>43</sup>The Rio Conventions, 'Actions on Forests' (2012), available at: {[https://unfccc.int/resource/docs/publications/rio\\_20\\_forests\\_brochure.pdf](https://unfccc.int/resource/docs/publications/rio_20_forests_brochure.pdf)} accessed April 2022.

<sup>44</sup>United Nations REDD Programme, 'ABOUT REDD+', UN-REDD Programme Collaborative Workspace (12 April 2021), available at: {<https://www.unredd.net/about/what-is-redd-plus.html>} accessed 15 June 2021.

<sup>45</sup>United Nations Climate Change, 'At COP25, a Call to Turn the Tide on Deforestation'.

<sup>46</sup>Eikermann, *Forests in International Law*, p. 22.

<sup>47</sup>Millennium Ecosystem Assessment, *Forest and Woodland Systems*.

<sup>48</sup>Eikermann, *Forests in International Law*, p. 1.

<sup>49</sup>United Nations Climate Change, 'At COP25, a Call to Turn the Tide on Deforestation'; Adriana Abendur, 'A Global Forest Treaty is Needed Now', Pass Blue: Independent Coverage of the UN, available at: {<https://www.passblue.com/2020/12/10/a-global-forest-treaty-is-needed-now/>} accessed 12 January 2022; Ritchie and Roser, 'Deforestation and Forest Loss'.



Any discussion of the forest must include the fact that deforestation and land change use are intertwined with colonisation and enduring (post)colonial power structures. Colonials brought alien political and cultural systems and imported non-Indigenous species, forever changing the landscapes and peoples they invaded. These colonial systems suppressed and sometimes destroyed other ways of knowing and using forests that originated with the legitimate custodians of the land, including law that teach values, ethics, and ways to live in partnership with country, the living systems, and the more-than-human.

The suppression and devaluation of Indigenous knowledge and science that demonstrates most clearly the claim that environmental justice is social justice. There is no such thing as apolitical ecology in the colonies and postcolonies: all that is environmental is political. As Clint Carroll, Cherokee citizen and assistant professor of ethnic studies, asserts ‘in common with other indigenous peoples throughout the globe, American Indian political struggles always come back to the issue of land and the degree of our connection to it.’<sup>50</sup> He inverts the phrase preferring ‘the *political* is inherently *environmental*.’<sup>51</sup>

While the settler and colonist thought of the land as ‘property, real estate, capital or natural resources’, Robin Wall Kimmerer argues that to the Native peoples in the United States and her people the Anishinaabe, the land meant more: ‘it was everything: identity, the connection to our ancestors, the home of our nonhuman kinfolk, our pharmacy, our library, the source of all that sustains us.’<sup>52</sup> The birch forests for the Anishinaabe were not resources, they were filled with a ‘cornucopia of gifts’ and the people ‘lived well for long time under the care of the maples and birches, the sturgeon and beaver, eagle and loom’. Humans and more-than-humans flourished, but then another people’s history was ‘braided’ into Indigenous ones.<sup>53</sup> Colonial history defended the alien and colonial understandings of land as abstract property through unequal treaties, theft, and legal systems that protected the rights of the colonisers over the colonised.

This history of colonial expansion was mirrored across the globe. For the forests, too, the colonial exploitation of wood, especially in Africa and South and Southeast Asia, led to land clearing to produce industrial crops like cocoa, cotton, coffee, and tobacco as well as vast plantations of palm oil and rubber.<sup>54</sup> In Australasia and the Americas, they were also cleared for cattle, sheep, sugar cane, and canola, a predation that continues. Forest degradation and deforestation are an inevitable endpoint to merely understanding trees as a resource with no intrinsic value of their own. Furthermore, poor forest management adds to the risk of forest fires in climate change-induced heat waves and droughts.

To untangle and remove these alien histories and colonial expansions, local and Indigenous multispecies understandings are crucial. As Sophie Chao argues, the rejection of the monocrop oil palm in Papua New Guinea by the Marind People is also a denunciation of political colonisation, ethnic domination, and violent capitalist exploitation. Protecting the multispecies life-worlds of the Marind protects human rights and dignity.<sup>55</sup>

To further highlight the power of the tree, The Green Belt Movement (GBM) in Kenya demonstrates the connections between environmental justice, social justice, the tree and the forest. The GBM was founded by Wangari Maathai – a scientist, activist, and Nobel Peace Prize winner – in 1977 in response to rural women’s struggles with environmental degradation. Water and food supplies were disappearing and becoming less secure, and they had to travel much farther for fuel and fencing. The organisation encouraged women to work together to plant trees to help

<sup>50</sup>Clint Carroll, *The Roots of Our Renewal: Ethnobotany and Cherokee Environmental Governance* (Minneapolis, MN: University of Minnesota Press, 2015), p. 12.

<sup>51</sup>Ibid.

<sup>52</sup>Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teaching of Plants* (Canada: Milkweed Editions, 2013), p. 17.

<sup>53</sup>Ibid., p. 366.

<sup>54</sup>Eikermann, *Forests in International Law*, p. 13.

<sup>55</sup>Chao, *In the Shadow of the Palms*.

with soil degradation and store rainwater and wood for various needs. Wangari Maathai and her organisation have planted more than 51 million trees with four thousand community nursery groups. GBM also provides small monetary remuneration for their work.<sup>56</sup>

Maathai and her organisation linked social and environmental justice through their actions and their demands, which underlined the need to support both people and the ecosystem services that forests provide. As Matthai said in her 'Year of the Forests' address,

We must stop undervaluing and taking for granted the environmental services forests and trees provide, especially when they are standing in some remote poor part of the world. They are taken for granted and treated as unlimited. Well, they are finite. Therefore, we need to bring into our dialogues and accounting systems their full value and be willing to pay.<sup>57</sup>

In *Slow Violence and the Environmentalism of the Poor*, Nixon writes that tree planting in Kenya through the Green Belt Movement and the 'theatre of the tree' was a practical response to environmental calamity, but that it was also a way to 'metaphorically cultivate democratic change ... the gesture could bring new life into a dead metaphor of grassroots democracy'.<sup>58</sup> It cultivates a powerful intersectional environmentalism that frees the tree planter from top down, hierarchical cultures. It regenerates both forests and civic life and is 'a radically subversive bottom-up ethic with a long timeline of tree growth'.<sup>59</sup>

Further, the GBM was guided by ecofeminist beliefs that understand tree planting as a praxis to resist environmental calamity, neoliberal capitalist development plans, militarised responses to environmental risk, and patriarchal and colonial forms of power.<sup>60</sup> Nixon names Maathai an 'ungovernable woman' who questioned the institutionalised deceptions and profitable complicities of a male power elite.<sup>61</sup> Her work brought her into conflict with the then President Daniel Arap Moi: Matthai often lived in hiding and was beaten by the police and Moi's supporters.<sup>62</sup> Matthai's expertise in science, women's rights, and environmentalist advocacy for the poor and vulnerable made her a target of charges of unpatriotic and unbecoming behaviour.<sup>63</sup> She advocated local practices that connected to green values and environmental science and deflected the alleged treachery charges with calls for a transnational patriotism with 'deep local roots' and 'planetary values'.<sup>64</sup>

GBM's work also highlights the symbolic potency of the tree in human culture; the many ways that environmental and cultural, social, and political systems intersect and transform. In Kenya, the tree became the symbol for democratic change and emphasised that governance of the environment is impossible without democratic, inclusive, and equitable spaces.<sup>65</sup> In her 2004 Nobel Peace Prize acceptance speech, Maathai said tree planting was a natural choice to aid women. It is simple, attainable, time-bound, and creates an engaged citizenry. Importantly,

the participants discover that they must be part of the solutions. They realise their hidden potential and are empowered to overcome inertia and take action. They come to recognise

<sup>56</sup>Green Belt Movement, 'Our History', available at: {<http://greenbeltmovement.org/who-we-are/our-history>} accessed 20 January 2022.

<sup>57</sup>Namulundah Florence, *Wangari Matthai: Visionary, Environmental Leader, Political Activist* (New York, NY: Lantern Books, 2014), p. 230.

<sup>58</sup>Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), pp. 132–3.

<sup>59</sup>*Ibid.*, p. 135.

<sup>60</sup>Carolyn Merchant, *Death of Nature: Women, Ecology, and the Scientific Revolution* (New York, NY: Harper & Row, 1980); Stacy Alaimo and Susan Hekman, *Material Feminisms* (Bloomington, IN: Indiana University Press, 2007).

<sup>61</sup>Nixon, *Slow Violence and the Environmentalism of the Poor*, p. 144.

<sup>62</sup>Kyrke Gaudreau, 'Hope grows on trees', *Alternatives*, 39:2 (2013), p. 43.

<sup>63</sup>Nixon, *Slow Violence and the Environmentalism of the Poor*, p. 147.

<sup>64</sup>*Ibid.*, p. 135.

<sup>65</sup>Florence, *Wangari Matthai*, p. 234.

that they are the primary custodians and beneficiaries of the environment that sustains them.<sup>66</sup>

The tree becomes a symbol for peace and conflict resolution; the act of planting a tree is ‘an act of intergenerational optimism, a selfless act at once practical and utopian, an investment in a communal future the planter will not see; to plant a tree is to offer shade to unborn strangers.’<sup>67</sup> As Maathai’s biographer Namaulundah Florence writes, ‘Using trees as a symbol of peace is in keeping with a widespread African tradition ... such practices are part of an extensive cultural heritage which contribute both to the conservation of habitat and to cultures of peace.’<sup>68</sup> In an interview published in 2013, Matthai spoke of the symbolic power of the tree in her work for both ecological and societal regeneration: ‘The tree is a symbol of a commitment to action, a commitment to do something to transform communities. Wherever we had issues of conflict trees were planted and we called them peace trees.’<sup>69</sup> Of course, their power is also more than metaphorical: ‘If you destroy the forest then the river will stop flowing, the rains will become irregular, the crops will fail and you will die of hunger and starvation.’<sup>70</sup>

### **The forest in its own context**

But enough about humans. Having set the scene with the ways in which forests are important for the Earth, human culture, and social justice, we can now turn to the agency, or actancy<sup>71</sup> of trees and forests. They are vital to life on the planet and provide humans with many essential services, but what of their intrinsic value? Trees must be celebrated for more than just our material reasons. As Peter Wohlleben writes, we should care about them because ‘of the little puzzles and wonders they present us with’ and that ‘under the canopy of the trees, daily dramas and moving love stories are played out’ and they are a place ‘where adventures are to be experienced and secrets discovered.’<sup>72</sup>

Estimated at three trillion in number, trees are a significant more-than-human community on a planetary scale.<sup>73</sup> Additionally, human understanding of plants and trees has grown over the past few decades, revealing forests to be a complex multispecies community. However, even with increased knowledge about forests, the perception of forests remains rooted in their use value for human beings. As David George Haskell writes of the Cumberland Plateau forests in Tennessee, the powerful timber executives converting native oak-hickory forests into monoculture pine plantations had likely spent little or no time in the forests in question: ‘The boardroom was full of talk of the forest, yet the forest was barely there.’<sup>74</sup>

As Anna Tsing Lowenhaupt asks in *The Mushroom at the End of the World*, ‘to walk through a forest, even a damaged one, is to be caught by the abundance of life ... But how does one tell the

<sup>66</sup>Ibid., p. 235.

<sup>67</sup>Nixon, *Slow Violence and the Environmentalism of the Poor*, p. 134.

<sup>68</sup>Florence, *Wangari Matthai*, p. 147.

<sup>69</sup>Gaudreau, ‘Hope grows on trees’, p. 44.

<sup>70</sup>Green Belt Movement, ‘Our History’.

<sup>71</sup>I use the term ‘actancy’ rather than agency to denote a different relationship between the ‘agent’ and the structure that this ‘agent’ acts within. Stemming from semiotic theory, and most notably in the work of Bruno Latour, an actant is an actor that modifies other actors through its actions or existence. This is especially helpful framing when accounting for nonhuman agency in larger systems. There need not be a focus on the intention of actors, but rather on an actant’s connection to and modification of other actants.

<sup>72</sup>Peter Wohlleben, *The Hidden Life of Trees: What They Feel, How They Communicate – Discoveries from a Secret World* (Melbourne, Aus.: Black, Inc, 2015), p. 159.

<sup>73</sup>Gabriel Popkin, ‘“Wood wide web”: The underground network of microbes that connects trees – mapped for first time’, *Science* (15 May 2019), available at: {<https://www.sciencemag.org/news/2019/05/wood-wide-web-underground-network-microbes-connects-trees-mapped-first-time>} accessed 20 May 2021.

<sup>74</sup>David George Haskell, ‘Listening to the Thoughts of the Forest’, Undark, available at: {<https://undark.org/2017/05/07/listening-to-the-thoughts-of-the-forest/>} accessed 20 December 2021.

life of a forest?’<sup>75</sup> Tsing writes that we are unused to ‘reading stories without human heroes ... Can I show landscape as the protagonist of an adventure in which humans are only one kind of participant?’<sup>76</sup> I began by introducing how colonialisation has affected forests and trees, but human bias and modernist cultural beliefs about progress and modernisation have constricted our ideas of world making so that ‘to enlarge what is possible, we need other kinds of stories – including adventures of landscapes’.<sup>77</sup>

Recent publications have offered engaging glimpses into the life of the tree. What Immanuel Kant saw in the forest as a concealed plan of nature to bring about a state of perfection through competition, the tree experiences as a community oriented towards survival *and* cooperation. In *The Hidden Life of Trees*, Peter Wohlleben describes the forests he has cared for and studied in detail. He reminds us that trees are important, but it is when they ‘unite to become a fully functioning forest’ that the whole is greater than its parts: ‘Forests matter at a more fundamental level than most of us realize.’<sup>78</sup> Wohlleben writes that the forest is ‘held in a delicate balance’ not by all knowing and staying in their niche, but rather each species is controlled by ‘innate behaviors that protect the forest from overexploitation’ rather protecting itself as a singular species, or as a singular tree.<sup>79</sup> He shares the example of the jay, a bird that ‘eats acorns and beechnuts but buries a multitude of them as it does so, ensuring that the trees can multiply more efficiently with it than without it’.<sup>80</sup>

We learn that trees are social creatures that care for each other and ‘sometimes even going so far as to nourish the stump of a felled tree for centuries after it was cut down by feeding it sugars and other nutrients, and so keeping it alive’.<sup>81</sup> Trees are connected to each other through their root systems and ‘it appears that nutrient exchange and helping neighbours in times of need is the rule, and this leads to the conclusion that forests are superorganisms with interconnections much like ant colonies.’<sup>82</sup>

In *Finding the Mother Tree*, forest scientist Suzanne Simard explains how she discovered that nutrients are delivered remotely through fungal networks at the trees’ roots. Part autobiography and part nature writing in the tradition of Rachel Carson, Simard spins a tale of the forest as a puzzle. She puts together a picture of ‘startling interdependence, linked by a system of underground channels, where trees perceive and connect and relate with an ancient intricacy and wisdom that can no longer be denied’.<sup>83</sup> Through hundreds of experiments Simard published rigorous, peer-reviewed evidence of tree-to-tree symbiosis and communication.

Simard found that the older trees nurture their young and know their kin. These Mother Trees, as she dubs them, are ‘the majestic hubs of the centre of the forest communication protection and sentience’ and when they die ‘they pass their wisdom to their kin, generation after generation, sharing the knowledge of what helps and what harms, who is friend or foe, and how to adapt and survive in an ever-changing landscape.’<sup>84</sup> Forest communication has similarities with our human brains – the trees communicate through chemical signals. These signals are ‘created by ions cascading across fungal membranes’.<sup>85</sup> In other words,

<sup>75</sup>Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in the Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015), p. 155.

<sup>76</sup>Ibid.

<sup>77</sup>Ibid., p. 156.

<sup>78</sup>Wohlleben, *The Hidden Life of Trees*, pp. 8–9.

<sup>79</sup>Ibid., p. 80.

<sup>80</sup>Ibid.

<sup>81</sup>Ibid., p. 7.

<sup>82</sup>Ibid., p. 15.

<sup>83</sup>Suzanne Simard, ‘Finding Mother Earth’, Ecological Landscape Alliance, available at: {<https://www.ecolandscaping.org/01/resources/book-reviews/finding-mother-earth/>} accessed 10 May 2021.

<sup>84</sup>Susan Simard, *Finding the Mother Tree: Uncovering the Wisdom and Intelligence of the Forest* (New York, NY: Penguin Books, 2021), loc. 352–3.

<sup>85</sup>Ibid., loc. 348.

Trees have an extensive underground network that connects them to each other and other ‘sidekicks’ like microbes and fungi. Dubbed the ‘wood wide web,’ there are vast communities of organisms that connects forest trees that have been mapped on a global scale using a database of more than 28,000 tree species in over 70 countries.<sup>86</sup>

Simard writes that her time as a ‘forest detective’ has shown her that trees send warning signals as rapidly as phone calls; they help each other through sickness and hard times, and work in similar ways to human civil society. Her time in the forest was such a powerful experience for her that she is now convinced ‘that the forest is wired for wisdom, sentience, and healing’.<sup>87</sup> Her book, as she sees it, is not a book about saving trees, but rather about how the trees might save us.

## Politics, forest, planet

### *What, then, might be the lessons for International Relations?*

In 1951, Alfred Sauvy introduced the term ‘Third World’ as a synonym for underdeveloped countries in his article entitled ‘Three Worlds, One Planet’. The term had a socioeconomic and political quality that highlighted the ‘deep geopolitical dimension’ to developmental diversification.<sup>88</sup> While it came to mean underdevelopment and poorer quality of life than those in other countries, its roots are linked to the power of a ‘third way’ through the non-aligned movement during the Cold War.<sup>89</sup> In the ‘Trois mondes, une planète’ the ‘tiers monde’ was meant to point the reader towards to an analogy with the tiers etat, or third estate. ‘Tiers Monde’ brings a powerful set of associations that were not intended to hierarchise the world but to rather point to the potential political force of these countries to become a ‘third pole’ in a system of two-bloc rivalry.<sup>90</sup>

Why do I refer to this framing of international politics? How does the Anthropocene epoch add to and complicate these three human worlds? In answer, it draws us into a conversation about hierarchies and allows for a rethinking of how humans have ordered the international after the end of the Cold War. The addition of the more-than-human into international politics profoundly questions human notions of time, scale, democracy, agency, power, and representation. I have argued elsewhere that the planetary real of human-induced climate and biosphere change should and will influence how IR functions as a discipline; an awareness of humans exceeding planetary boundaries might be the basis of a new realism for the twenty-first century.<sup>91</sup>

So, let us consider the embedded and material global forest as a fruitful thought experiment: an alternative more-than-human ‘tiers monde’ of the twenty-first century. Trees and their needs do not replace the very important ongoing debate about humans and global environmental justice and resource control, but rather add to the imperative to take a holistic view of justice for the human and more-than-human alike. Many ongoing global inequities are about such issues.

Additionally, thinking of the global forest as a planetary estate, a ‘third pole’ allows the currently hegemonic worlds to coalesce around another deep dimension, one that embodies both scientific understandings of the Earth and human political understandings of the world. As Bruno Latour has often argued, Science has important things to teach us about emergent realities but too often portrays its project as disinterested, value-free and apolitical, while Politics imagines itself as able to imagine anything into being regardless of scientific boundaries, facts, and

<sup>86</sup>Popkin, “Wood wide web”.

<sup>87</sup>Simard, *Finding the Mother Tree*, loc. 357.

<sup>88</sup>Marcin Solarz, *The Language of Development: A Misleading Geography* (London, UK: Routledge, 2014), p. 59.

<sup>89</sup>Ibid.

<sup>90</sup>Marcin Solarz, “‘Third World’: The 60th anniversary of a concept that changed history”, *Third World Quarterly*, 33:9 (2007), pp. 1561–73.

<sup>91</sup>Anthony Burke, Stefanie Fishel, Audra Mitchell, Simon Dalby, and Daniel J. Levine, ‘Planet Politics’; Fishel, *The Microbial State*.

evidence. The two worldviews – scientific and political – must engage and dialogue to respond to respond to the changing material conditions of planet Earth.

The global forest is the ‘third pole’ that pushes against these human worlds of Science and Politics in the way that the non-aligned movement challenged the two-bloc division of the world, and in so doing, can suggest a third way that challenges the anthropocentric division of the world. This challenge includes a (careful and reflexive) dialogue between these two views. The scientific and political views of the planet must be brought into democratic dialogue that tempers the narrowness of each view without falling back into technocratic certainty. Our global institutions need scientific approaches that are tethered to historically informed political agendas turned towards justice, equality, and reparation for past behaviour and injustices within a biosphere undergoing rapid and alarming change.

‘Three Worlds, One Planet’ still holds power to interrogate and challenge the structure of international politics – in its institutions, instruments, and mechanisms – for the good of planetary global community, but this time in collaboration with the more-than-human. Such a metaphor would be a scientific and political force that pushes against a human-centred vision of global power and forces the two to come together into one planet, shaped by both. It reaffirms how the global forest can support a planetary ontology for continued survival on Earth. Trees are the lungs, the catchment, and the refuge of biodiversity; they bind all beings to the biosphere. ‘Three Worlds, One Planet’ is a forested Earth.

Normative and disciplinary conclusions should be drawn from such a repositioning. Normatively, forests are globally significant and need a voice – however, we might imagine a tree’s voice to sound – which is again informed by science and care for the planetary community of the forest.<sup>92</sup> Creating laws, treaties, and mechanisms should begin with what the trees and the forests reveal about themselves through research that reveals forests’ biodiversity and symbiotic communicativity: ‘Thinking like a forest’ in Eduardo Kohn’s terms.<sup>93</sup> Disciplinarily, this is not only a metaphor but a demand that International Relations must become radically other through engagement with the more-than-human. Under what conditions can world politics survive if global forests are decimated further? *The condition of possibility for human politics is a living planet.* Forests mitigate harsh weather, create water catchments, and sequester carbon in their bodies in both life and death, and in turn support seedlings and many other species.

Jonathan Pickering and John Dryzek point us in a productive direction in their *Politics of the Anthropocene*. The authors point out that Holocene era institutions are often part of the problem. Tools of capitalist markets are beset with damaging path dependencies; institutions cannot, or will not, adapt to the changing conditions and the threat of imminent ecological collapse. ‘The dirtiest polluters may also be those with the power to secure exemptions for emission trading schemes’ and forest-based carbon offsets allow the same destructive behaviour to continue.<sup>94</sup> This pattern is certainly true in the forestry industry. Forestry companies in tropical ecosystems, or in old growth boreal forests, often replant with fast growing trees that are non-Indigenous or do not have the same beneficial effects, such as the ability to sustain rich biodiversity, of the trees that were harvested. The destruction of old growth forests and clearcutting are greenwashed with tree planting campaigns after the damage has been done.<sup>95</sup>

Such examples reinforce the necessity of adaptive and ecocentric Anthropocene governance. They demonstrate the need for system-wide processes and ‘thinking in terms of reflexivity: the capacity of structures, systems, and sets of ideas to question their own core commitments, and if necessary change themselves in response’.<sup>96</sup> Both international and local transformation will

<sup>92</sup>Burke and Fishel, ‘Across species and borders’.

<sup>93</sup>Eduardo Kohn, *How Forests Think: Toward an Anthropology of the More than Human* (Berkeley, CA: University of California Press, 2013).

<sup>94</sup>John Dryzek and Jonathan Pickering, *Politics of the Anthropocene* (Oxford, UK: Oxford University Press, 2018), loc. 813.

<sup>95</sup>Shaul Cohen, *Planting Nature: Trees and the Manipulation of Environmental Stewardship in America* (Berkeley, CA: University of California Press, 2004), pp. 4–5.

<sup>96</sup>Dryzek and Pickering, *Politics of the Anthropocene*, loc. 898.

be required. The UNFCCC secretariat believes that ‘Trust-building through the UNFCCC transparency framework will remain vital for collaboration’ and that ‘reducing deforestation requires an effort by all stakeholders, engaging local communities and indigenous peoples, women and youth, civil society and the private sector, as well as producers and consumers.’<sup>97</sup>

Such myriad and complex changes must happen quickly. Humans have exceeded, and are on track to exceed all, planetary boundaries that define the safe operating space for human societies to develop and thrive. These boundaries are based on a scientific understanding of a functioning and resilient Earth system. In 2015, Will Steffen et al. advised that it would ‘be unwise to drive the Earth system substantially away from a Holocene-like condition’ and that respecting a planetary boundaries framework ‘will greatly reduce the risk that anthropogenic activities could inadvertently drive the Earth system to a much less hospitable state’.<sup>98</sup>

The need for a new paradigm is even more urgent in 2022. Not only are we suffering through a global public health crisis that has its roots in human overdevelopment and habitat destruction, but we have also exceeded at least four of the nine planetary boundaries as defined in 2009 by Johan Rockström and 28 other internationally renowned scientists.<sup>99</sup> Biosphere integrity and biogeochemical flows (where forest integrity is a fundamental anchor) are beyond the zone of uncertainty, and land-system and climate change are in a zone of increasing risk. The planet is currently undergoing a sixth great extinction event due to human activity. These presage irreversible Earth system tipping points that could be similar in scale and severity to the world wars of the twentieth century.<sup>100</sup>

This surely is the terrain of IR, a discipline that has always wrestled with large-scale change and crisis: war, the regulation of chemical and nuclear material and weapons, genocide, and crimes against humanity. In the context of the Anthropocene, deforestation, ocean acidification, land degradation, habitat fragmentation, ice shelf collapse, and climate change bring with them disruptions to human and more-than-human life that have few analogues in human history.

What, then, can the forest and tree teach us about reflexivity and boundaries? A crucial lesson to learn is that healthy ecosystems keep elements within that ecosystem in check to ensure continuing health and resilience for all. Rather than a simple story about survival of the fittest, forests weave an intricate account of solidarity, interdependence, and symbiosis. Trees enjoy systems of ‘social security’ that protect individual trees, the forest, entire ecosystems, the biosphere and planet Earth. The singular tree is simultaneously the global tree. Different species often struggle for resources, but it is not in the forest’s best interest to lose weaker members. ‘If that were to happen, it would leave gaps that would disrupt the forest’s sensitive microclimate with its dim light and high humidity.’<sup>101</sup> Further, the rate of photosynthesis is the same for all trees be they strong or weak and the fungi networks below the surface ‘act as gigantic redistribution mechanisms’.<sup>102</sup> Beronda Montgomery, author of *Lessons from Plants*, writes

Behaviors like mycorrhizal symbiosis, kin recognition and collaborative environmental transformation suggest that overall, plants are better together. By staying in tune with their external environment, plants can determine when working together and fostering interdependence is better than going it alone.<sup>103</sup>

<sup>97</sup>United Nations Climate Change, ‘At COP25, a Call to Turn the Tide on Deforestation’.

<sup>98</sup>Will Steffen et al., ‘Planetary boundaries: Guiding human development on a changing planet’, *Science* (13 February 2014), available at: {<https://www.science.org/doi/10.1126/science.1259855>}.

<sup>99</sup>Stockholm Resilience Centre, ‘Planetary Boundaries’, available at: {<https://www.stockholmresilience.org/research/planetary-boundaries.html>} accessed 5 June 2021.

<sup>100</sup>Lenton et al., ‘Climate tipping points’, p. 592.

<sup>101</sup>Wohlleben, *The Hidden Life of Trees*, pp. 21–2.

<sup>102</sup>Ibid., p. 23.

<sup>103</sup>Beronda Montgomery, ‘Plants thrive in a complex world by communicating, sharing resources and transforming their environments’, *The Conversation* (2014), available at: {<https://theconversation.com/plants-thrive-in-a-complex-world-by-communicating-sharing-resources-and-transforming-their-environments-156932>} accessed 5 June 2021.

She emphasises that even if we oversimplify, plants can supply useful analogies for humans. Learning from trees tells a story of mutual survival and of deep symbiotic relations and an ethic of care.<sup>104</sup> Trees and forests provide a way to think beyond human exceptionalism to provide cognitive tools for solving challenges. ‘As we make our way in a constantly changing world, plants offer all kinds of lessons for humans about independence, interdependence and supporting each other.’<sup>105</sup> Listening to trees and forests also means confronting the ethical demand that humans also take seriously the lifeworld and perspectives of the more-than-human.<sup>106</sup> They do not exist solely for our use, be it through their bodies as ‘resources’ or as stories or metaphors that teach us about being human.

Robin Wall Kimmerer notes that Western traditions place plants at the bottom of the hierarchy of beings, but in Native ways of knowing, ‘humans have the least experience with how to live and thus the most to learn – we must look to our teachers among other species for guidance.’<sup>107</sup> ‘Plants know how to make food and medicine from light and water, and then give it away.’<sup>108</sup> This aids in making a case for ‘plant ethics based not on otherness’, but one close relation and care where ‘it is vital to recognise that much multispecies and plant-thinking overlaps with and owes its roots to Indigenous cosmologies and perspectives.’<sup>109</sup>

However, a word of caution about projecting human meanings onto the more-than-human living world is needed: these are nested and relational horizontal processes, but it does not mean that they equate to human notions of morality.<sup>110</sup> Human moral worlds are different from those of the more-than-human. For example, trees often privilege care of their own species young over those of another tree species. The lesson to take away could be one that we are too familiar with in human politics: the return to a politics of friend/enemy so clearly laid out by thinkers like Carl Schmitt.<sup>111</sup> The more complex lesson could be as follows: trees care for their young but do so in such a way that supports the ongoing diversity of the forest, and the world, as an ecosystem of mutual survival.

Care for our young should not come at the expense of others. In a forest, ‘everything doesn’t collapse because there are safeguards against those that demand more than their due’ as ‘an organism that is too greedy and takes too much without giving anything in return destroys what it needs for life and dies.’<sup>112</sup> Herein is the lesson. A hard one to be sure, but one the human species must heed.

Additionally, multispecies relationships are crucial to the survival of every tree and connect them to other complex communities. It seems that fungi are more intent on compromise and help support all root systems.<sup>113</sup> A further lesson: Solidarity and symbiosis create a less impoverished vision of the planet and better our chances for survival than one of individuality and extraction. Simard’s research into forest communication and fungal networks remind us that other species can show humans ways in which we can live together in mutual benefit. In Robin Wall Kimmerer’s discussion of a mass fruiting of whole groves of pecan trees, she writes that the abundance of pecans is a collective act of unity rather than one that gives benefits to a single tree, or tree species. It is not a matter of individual survival for one species, but rather that by giving so much of themselves, they support their future growth and that of others around

<sup>104</sup>Ibid.

<sup>105</sup>Ibid.

<sup>106</sup>Celermajer et al., ‘Justice through a multispecies lens’.

<sup>107</sup>Kimmerer, *Braiding Sweetgrass*, p. 9.

<sup>108</sup>Ibid., pp. 9–10.

<sup>109</sup>For an excellent survey of the plant studies literature, see Anna M. Lawrence, ‘Listening to plants: Conversations between critical plant studies and vegetal geography’, *Progress in Human Geography* (2021), esp. p. 5.

<sup>110</sup>Kohn, *How Forests Think*, loc. 526.

<sup>111</sup>Carl Schmitt, *The Concept of the Political* (Chicago, IL: University of Chicago Press, 1996).

<sup>112</sup>Wohleben, *The Hidden Life of Trees*, p. 80.

<sup>113</sup>Ibid., p. 46.



them. After the fruiting, the ‘bellies of boys and squirrels’ became fat and with this collective abundance and are better able to survive the winter. There, she writes, ‘we see the power of unity. What happens to one happens to us all. We can starve or feast together. All flourishing is mutual.’<sup>114</sup>

Following Marisol de la Cadena,<sup>115</sup> Eduardo Kohn,<sup>116</sup> and Rafi Youatt,<sup>117</sup> Western understandings of personhood and life are not the only way of recognising how distinctions are drawn between and among different lifeworlds and human groups. In settler-colonial states, there is the ongoing weight of dispossession and destruction of other ways of knowing and caring for the more-than-human and ecosystems. Justice, then, must be reshaped to arc across human and more-than-human communities damaged by extraction and colonisation to create places of coexistence that guide ‘Indigenous peoples, settler-descended peoples and more-than-humans into new dialogue’ that helps to transition to discourses that are founded on the relationality of life.<sup>118</sup>

## Conclusion

Placing semantics to the side for a moment, let us consider the *materiality* of the Anthropocene rather than its *definition*. Biodiversity decline, extreme weather events, hundreds of extinct species with millions more in danger, melting ice caps, increased human suffering and death, and of course, deforestation, are its manifold evidence. These effects of human intervention into natural systems are both an urgent crisis and one that has been slowly unfolding over centuries. Regardless of whether the start of the Anthropocene is placed at the beginning of the nuclear era in 1948, in 1492 with colonisation and slaughter of millions of people and their ways of being, or with the agricultural or industrial revolutions, it remains that humanity must grapple with its power to alter natural global processes and its history that condemned so many to suffering and death. The power to alter global processes adds uncomfortable, and an often incommensurate, temporal element to human responses to the Anthropocene. Human institutions must grapple with a *longue durée*, or a deep geological time, to respond to climate change and battle immediate crises on multiple fronts. Incremental policy change will not be enough to tackle these wicked problems. As David Wallace-Wells writes, ‘we are living already in the muddy thick of climate difficulty, some of sunk deeper than others, but we can’t let ourselves be satisfied for keeping our heads out of the muck ... it would be criminal to look back on what is happening now [fires and heat] and will happen in coming months and think, “We managed”.’<sup>119</sup>

Not only do we have to learn new ways of being in the world to mitigate and adapt to climate change and its tipping points, but we must also desist from acting in ways that are deleterious to our continued survival. Transforming and refusing are perhaps the biggest challenge *Homo sapiens* faces. To return to the trees and forests, often the best course of action is to leave them alone. As Matthew Webb, an expert in parrots and their forest habitat emphasises, ‘some of the most fundamental action we need to take is simple: don’t do anything. Leave the forests alone.’<sup>120</sup>

<sup>114</sup>Kimmerer, *Braiding Sweetgrass*, p. 15.

<sup>115</sup>Marisol de la Cadena, *Earth Beings: Ecologies of Practice across Andean Worlds* (Durham, NC: Duke University Press, 2015).

<sup>116</sup>Kohn, *How Forests Think*.

<sup>117</sup>Youatt, *Interspecies Politics*.

<sup>118</sup>Soren Larsen and Jay Thompson, *Being Together in Place: Indigenous Coexistence in a More than Human World* (Minneapolis, MN: University of Minnesota Press, 2017), p. 1.

<sup>119</sup>David Wallace-Wells, ‘How to live in a climate “permanent emergency”’, *New York Intelligencer*, available at: {<https://nymag.com/intelligencer/2021/07/how-to-live-in-a-climate-permanent-emergency.html>} accessed 7 July 2021.

<sup>120</sup>Mimi Perkins, ‘“Leave the forests alone”: Swift action needed to save endangered parrots’, *The Age*, available at: {[https://www.theage.com.au/environment/conservation/leave-the-forests-alone-swift-action-needed-to-save-endangered-parrots-20210521-p57tvg.html?fbclid=IwAR2vxEL\\_A94XPfX\\_gL6jpOJ9yC9ksKIWIMy8NKkAKjFJvCFbB\\_GPaKe7Mc](https://www.theage.com.au/environment/conservation/leave-the-forests-alone-swift-action-needed-to-save-endangered-parrots-20210521-p57tvg.html?fbclid=IwAR2vxEL_A94XPfX_gL6jpOJ9yC9ksKIWIMy8NKkAKjFJvCFbB_GPaKe7Mc)} accessed 3 April 2022.

To be clear, those to be kept out are the forestry and other extractive industries rather than Indigenous communities who have always belonged. The International Panel on Climate Change (IPCC)

recognizes that securing the rights of Indigenous peoples and local communities (IPLCs), livestock herders and farmers encourages sustainable farming and forestry, protects wildlife and habitats, enables people to live sustainably off their lands, and reduces the risk of climate actions like reforestation harming communities.<sup>121</sup>

In Australia, to give a practical example, such a politics includes returning forests to its traditional owners to care for them using knowledge that has benefited both country and its humans for tens of thousands of years.<sup>122</sup> Indigenous land tenure and strengthening access are central to a just transition to a greener economy.<sup>123</sup>

An important takeaway for our discipline is to communicate to students, policymakers, politicians, and each other how human societies are entangled with the health of the planet. If the forests die, humanity will also suffer and die. Their protection, through concerted efforts for a binding international deforestation treaty and support for local and Indigenous groups protecting trees and forests at the national and subnational level, is vital for global politics and global thriving. These actions can offer a way to create a discipline and a global politics that can move beyond the debates of the last century and find relevance in this one. Such a project rests on understanding that the human search for justice and survival rests on the survival of forests; that every tree is a global tree.

At the end of this journey through the global forest, we find ourselves back in the company of Gilles Deleuze and Felix Guattari. The global forest is not hierarchical and competitive, but flourishes across glorious, heterogeneous, more-than-human communities. Our hierarchies are subsumed into diffuse multispecies relationships across all scales, from the soils to the atmosphere. To paraphrase *A Thousand Plateaus*, the trees have connected their roots and have plugged their tracings back into the map.<sup>124</sup> The trees have replied: We were always a rhizome.

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<sup>121</sup>Anna Locke and Malcolm Childress, 'New IPCC climate report stresses Indigenous & local land rights 58 times: Let's respond with a concrete tenure plan (commentary)', *Mongabay*, available at: {<https://news.mongabay.com/2022/03/after-ipcc-climate-report-stresses-indigenous-local-land-rights-58-times-lets-respond-with-a-concrete-tenure-plan-commentary/>} accessed 1 April 2022.

<sup>122</sup>Bill Gammage and Bruce Pascoe, *Country: Future Fire, Future Farming* (Melbourne, Aus.: Thames and Hudson, 2021); Victor Steffensen, *Fire Country: How Indigenous Fire Management Could Help Save Australia* (Sydney: Hardie Grant Explore, 2020).

<sup>123</sup>Locke & Childress, 'New IPCC climate report stresses Indigenous & local land rights'.

<sup>124</sup>Deleuze and Guattari, *A Thousand Plateaus*, p. 14.