

Sovereignty and Climate Necropolitics: The Tragedy of the State System Goes ‘Green’

Meredith J. DeBoom
Department of Geography, University of South Carolina

Pre-Print

Final version: DeBoom, M. 2020. “Sovereignty and Climate Necropolitics: The Tragedy of the State System Goes ‘Green.’” In Andrew EG Jones, Natalie Koch, Christopher Lizotte, Juho Juukkonen and Sami Moisio (eds.), *Changing Geographies of the State: New Spaces of Geopolitics*. Cheltenham (UK): Edward Elgar Publishing, p. 276-287. Link: <https://www.e-elgar.com/shop/usd/handbook-on-the-changing-geographies-of-the-state-9781788978040.html>.

Abstract: This chapter introduces ‘climate necropolitics’, a transdisciplinary framework for evaluating how the norms of environmental sovereignty are changing through both climate change and geopolitical change — and with what consequences for whom and where. Climate necropolitics integrates three concepts from geography, science and technology studies (STS) and political theory: planetary sovereignty, sociotechnical imaginaries and necropolitics. I use these concepts to consider why climate change could provoke the emergence of a planetary sovereign, how such a sovereign might cultivate support for and implement its strategy for planetary management, and why planetary sovereignty may facilitate both rapid mitigative action and deepened socio-ecological violence. I ground climate necropolitics in the geo-imaginary of Ecological Civilization, tracing its manifestations from nuclear energy in China to resource nationalism in Namibia. I conclude by suggesting how geographers can use climate necropolitics to identify emerging spaces and relations of environmental sovereignty and assess their implications across multiple scales.

Keywords: *Climate Change, China, Energy, Necropolitics, Resource Nationalism, Sovereignty*

25.1. Two Moments in Changing Environmental Sovereignty

China entered the twenty-first century as both an environmental pariah and a rising geopolitical power. Media coverage of the 2008 Beijing Olympics — an opportunity for the ruling Chinese Communist Party (CCP) to enhance its ‘soft power’ and showcase China’s infrastructural modernity — was literally and figuratively clouded by images of a smog-choked cityscape. At the 2009 Copenhagen climate summit, the CCP’s insistence on ‘common but differentiated responsibilities’ despite China’s emergence as the world’s largest state-based source of greenhouse gas emissions in absolute terms prompted criticism that it was using ‘last season’s

playbook’ (Conrad 2012, p. 435). More recently, analysts have expressed concerns that the CCP is using the Belt and Road Initiative (BRI) to outsource carbon-intensive industries, with negative implications for global emissions targets and for communities and environments near investment sites (see Tracy et al. 2017; Elkind 2019; Jun and Zadek 2019).

Persistent geopolitical representations of China as a climate change laggard reflect its ongoing environmental challenges, but they also mask a significant shift in the CCP’s approach to the environment at both national and global scales. In the mid-2000s, a new discourse began to circulate within the CCP: Ecological Civilization. Initially advanced by then-Vice Minister of Environmental Protection Pan Yue, Ecological Civilization calls for environmental protection to be elevated to the domestic priority status long accorded to economic growth (Zhou 2006). After several years on the political margins, the CCP incorporated Ecological Civilization into its Constitution during the 18th National Congress of 2012 (Geall and Ely 2018; Hansen et al. 2019). The implementation of Ecological Civilization remains most evident in the domestic realm, but Xi Jinping has elevated its geopolitical prominence since his confirmation as President in 2013. In his 2017 report to the 19th National Congress of the CCP, for example, Xi (2017, p. 5) characterized Ecological Civilization as a ‘global endeavour’, with the CCP-led state as its ‘torchbearer’. Although the extra-territorial significance of Ecological Civilization remains uncertain, Xi’s discursive rescaling suggests that it may have implications for global norms of environmental sovereignty as well as for national norms of environmental management.

Around the time that Ecological Civilization was gaining traction within the CCP, another ruling party was making its own case for a change in environmental sovereignty norms. For Namibia’s SWAPO party, the most pressing issue was not climate change but rather sovereignty over a commodity that fuels its mitigation: uranium. As domestic unemployment and inequality ticked upward, SWAPO faced a populist backlash against the neoliberal mining policies it had pursued since Namibia’s 1990 independence. In lieu of outright nationalization — a difficult prospect for a state with little geopolitical clout and limited financial resources — SWAPO launched a state-owned mining company in 2008. It aptly named the company Epangelo — ‘government’ in Namibia’s Oshiwambo language — and promised that it would make ‘the people of Namibia meaningful participants in the mining business’ (Katali 2011). After several years on the margins

of Namibia's mining sector, Epangelo took a modest step toward pursuing its lofty mission in 2015, when it secured a 10 per cent ownership stake in the Husab uranium mine.

The planetary ambitions of the CCP's Ecological Civilization and the national aims of SWAPO's Epangelo initially appear to be at odds. Yet these two environmental sovereignty projects are deeply intertwined: China's state-owned China General Nuclear Power Group (CGN) is the majority (90 per cent) owner in the Husab mine. The rationale beyond CGN's ownership stake is self-evident. Husab is expected to become the world's second-largest uranium mine upon reaching full production. Its uranium will help the CCP achieve its ambitious targets for nuclear energy, one of several low-carbon energy strategies prioritized under Ecological Civilization. The rationale behind Epangelo's stake is less obvious. For CGN, co-ownership with Epangelo provides neither financial nor technical benefits. For Epangelo, a 10 per cent ownership stake is a far cry from national sovereignty over natural resources. Yet SWAPO's leadership has welcomed CGN's majority ownership of Husab, framing the mine as a 'win-win opportunity' (Geingob 2015). CCP leaders have expressed similar support for the mine's ownership structure, praising the Namibian government for creating a 'superior investment environment' that is producing 'win-win fruits' (Zhang 2018). How can we explain this unlikely alliance between the Chinese state's extra-territorial resource ownership, which might otherwise be characterized as 'resource grabbing', and the Namibian state's resource nationalism, which is typically associated with anti-foreign investment sentiments?

This chapter introduces 'climate necropolitics' as a framework for answering this question and considering, more broadly, how sovereignty is changing in association with both environmental and geopolitical change — and with what consequences for whom and where. Climate necropolitics integrates three theoretical concepts from geography, science and technology studies (STS) and political theory: planetary sovereignty (Mann and Wainwright 2018), sociotechnical imaginaries (Jasanoff and Kim 2009; Jasanoff 2015) and necropolitics (Mbembe 2003). Geographers have demonstrated the value of each of these concepts, separately, for analysing environmental issues (see Sparke and Bessner 2019 on planetary sovereignty, Bouzarowvski and Bassin 2011 on sociotechnical imaginaries, and Cavanagh and Himmelfarb 2015; Davies 2018; Alexis-Martin 2019; Margulies 2019 on necropolitics), but integrating them

into climate necropolitics facilitates new insights into the changing geographies of environmental sovereignty. Grounding each concept in the example of Ecological Civilization, I use climate necropolitics to consider why climate change could provoke the emergence of a planetary sovereign, how such a sovereign might cultivate support for and implement its strategy for planetary management, and why planetary sovereignty may simultaneously facilitate rapid mitigative action and deepened socio-ecological violence. Before turning to these inchoate environmental sovereignty futures, we need to begin with the paradox that characterizes the environmental sovereignty present: the ‘green’ tragedy of the state system.

25.2. Climate Change and the ‘Green’ Tragedy of the State System

‘[T]he link between the control of nature and the realization of state power’ (Whitehead et al. 2007, p. 6) has emerged as a major theme in political geographic scholarship on climate change (Gerhardt et al. 2010; Dittmer et al. 2011; Kythreotis 2012; Dalby 2013; Oels 2013; O’Lear and Dalby 2015; Bennett 2016; O’Lear 2016). Through both its atmospheric scale and localized effects, climate change challenges the assumption that environmental sovereignty neatly aligns with the territorial boundaries of states. Yet despite this scalar mismatch, the system of state-based environmental sovereignty has persisted. States have decision-making power over the terms and implementation of international climate change agreements, which in turn fortify state-based environmental sovereignty by measuring greenhouse gas emissions at the scale of the state (Kythreotis 2012; O’Lear 2016). These agreements also reinforce the assumption that the apparatus of the state is the most legitimate means of representing the interests of the population — the idealized nation — within its borders. Even climate change *inaction* has been used to fortify states’ claims to environmental sovereignty. Military and civilian ‘environmental security’ strategies that frame the state as the last defence against the anticipated anarchy of the environmental future have proliferated in recent years (Oels 2013; Dalby 2014). Indeed, ‘far from putting an end to the state framing of nature’, most state actors have responded to climate change by redoubling their efforts to render nature governable (Whitehead et al. 2007, p. 203).

The paradoxical entrenchment of statist geopolitics in the context of climate change is the ‘green’ iteration of what Agnew (2017) calls the ‘tragedy of the nation-state’: state-based sovereignty has proven inadequate and flawed as a structure through which to address climate

change, yet mitigation and adaptation efforts have often reinforced that very structure. In response to this ‘green’ tragedy, debates over the feasibility and desirability of a ‘world state’ or ‘world government’ have intensified in recent years (Wendt 2003; Tännsjö 2008). Proponents argue that a global sovereign could, ostensibly, identify and enforce a climate change strategy that transcends the parochialism of the state system to reflect the ‘global interest’ — or at least claims to do so. Could a sovereign with global environmental authority overcome the ‘green’ tragedy of the state system? If so, how and from where might such a sovereign emerge, and with what costs for whom? These questions prompt us to move beyond the state system to consider an alternative structure through which nature might be rendered governable: planetary sovereignty.

25.3. Ecological Civilization: A Nascent Shift Toward Planetary Sovereignty

In *Climate Leviathan: A Political Theory of Our Planetary Future*, Mann and Wainwright (2018) bring together theories of critical political economy (drawing on Karl Marx and Antonio Gramsci) and sovereignty (including those of Thomas Hobbes and Carl Schmitt) to consider how the foundational political assumptions that structure our world may ‘adapt’ to climate change. They identify the replacement of the current system of state-based sovereignty with ‘planetary sovereignty’ as the most likely such political adaptation. Mann and Wainwright’s (2018, p. 29) combination of planetary and sovereignty is twofold, describing a sovereign ‘capable of acting both at the planetary scale...and in the name of planetary management — for the sake of life on Earth’. A planetary sovereign, in other words, could both proclaim a planetary state of exception (a climate emergency) and implement the actions it deems necessary given that emergency on a planetary scale (such as deciding who may and may not emit carbon). Its sovereignty would be constrained only by the atmospheric limits of Earth itself.

Given the persistence of the state system in the face of climate change, Mann and Wainwright acknowledge that the emergence of planetary sovereignty is not a foregone conclusion. Yet they argue that such a change in sovereignty’s character, form and scale is not as implausible as it may seem. Drawing on Agamben’s (2005, p. 14) identification of the ‘paradigm of security’ as the ‘normal technique of government’ in the contemporary world, Mann and Wainwright (2018, p. 31) note that rescaling security to encompass the ‘making-secure of planetary life’ could provide a pathway for planetary sovereignty’s legitimation. They anticipate that such a pathway

is most likely to be pursued by one or more Western states, which together could form a ‘Climate Leviathan’ ‘armed with democratic legitimacy’ and devoted to the preservation of the capitalist system (Mann and Wainwright 2018, p. 30). Although Mann and Wainwright acknowledge that China could someday pursue planetary sovereignty, they do not dwell on this possibility or evaluate Ecological Civilization as a potential pathway for such a pursuit. This is understandable, particularly given the CCP’s fierce opposition to perceived violations of state-defined sovereignty in the past.

Under the leadership of President Xi, however, the CCP has begun to adopt a more assertive geopolitical role, including in the realm of the environment. In his 2017 report to the 19th National Congress of the Communist Party, Xi (2017, p. 5) went so far as to characterize China as ‘taking a driving seat’ in global efforts to combat climate change. China, he continued, had become ‘an important participant, contributor, and torchbearer in the global endeavour for ecological civilization’ (Xi 2017, p. 5). Xi’s rescaling of Ecological Civilization from a domestic initiative into a ‘global project’ certainly does not imply that the CCP will seek planetary sovereignty. Speaking a mere three years after then-US President Obama (2014) chastised China for not fulfilling its ‘special responsibility to lead’, Xi may have merely seized the opportunity to re-cast China from climate pariah to environmental leader — particularly in the wake of the US government’s announced intention to abandon the Paris Climate Accord. Indeed, Xi’s speech carefully contextualized Ecological Civilization in the broader framework of international cooperation.

Yet we should not overlook the significance of Xi’s characterization of Ecological Civilization as a *global* endeavour, particularly given the CCP’s historical prioritization of state-defined sovereignty. Even if this shift remains limited to the realm of rhetoric, it raises novel possibilities for environmental sovereignty futures — including the prospect of a planetary sovereign whose geopolitical strategy centres around non-interference, ‘win-win’ cooperation and state capitalism rather than democracy promotion, ‘soft power’ and ‘free market’ capitalism. How might such a sovereign justify and enact a planetary strategy for environmental management? And how might it contend with the persistent allure of nationalism, both at home and abroad? To address these

questions, we must consider how visions of the future like Ecological Civilization gain collective appeal and are ‘built into the hard edifices of matter and praxis’ (Jasanoff and Kim 2015, p. 323).

25.4. Realizing Ecological Civilization: Sociotechnical Imaginaries of Nuclear Energy in China

Jasanoff and Kim (2009) developed the concept of ‘sociotechnical imaginaries’ to explain how ideas of scientific and technological progress become enrolled in the pursuit of collective visions of the future. Bridging STS work on hybridity, including Haraway (1989), with political theory on social identity, including Anderson (1983) and Appadurai (1990), sociotechnical imaginaries refer to ‘collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’ (Jasanoff 2015, p. 4).

Sociotechnical imaginaries are similar to master narratives (Lyotard [1979] 1984) in that they provide ‘a rationale for society’s long evolutionary course while also committing that society to keep performing the imagined lines of the story’ (Jasanoff 2015, p. 20), but they extend beyond master narratives by identifying a specific strategy for achieving that future. Sociotechnical imaginaries, in other words, are Janus-faced; they are simultaneously past-grounded and future-oriented; prescriptive and normative. By identifying futures that are achievable and futures that ought to be achieved, they identify what *has been* as well as what *can* and *should be*.

In explaining why some sociotechnical imaginaries gain collective support while others flounder, Jasanoff and Kim foreground contextual factors, including history, national identity, and culture. They first developed sociotechnical imaginaries to explain why the governments of the US and South Korea adopted radically different rhetoric and implementation strategies to govern nuclear energy. Whereas US leaders framed nuclear energy as a ‘potentially runaway technology’ that required a ‘responsible regulator’, South Korean leaders characterized it as a transformative technology (‘atoms for development’) that could only be optimized through the deft guidance of the developmental state (Jasanoff and Kim 2009, p. 119). In each case, leaders used a dystopian or utopian vision of a technology, grounded in the norms and history of their respective society, to justify a different ‘necessary’ role for the state. As these examples suggest, political leaders often play an outsized role in naturalizing sociotechnical imaginaries, but it is the shared

understandings of social life and order (including what constitutes the public good) upon which they are based that facilitate their systemic adoption. This is why sociotechnical imaginaries, although subject to contestation (Delina 2018), often become naturalized to such a degree that alternative visions of the future — and strategies by which to accomplish those visions — are foreclosed upon.

Applying sociotechnical imaginaries to Ecological Civilization sheds light on why nuclear energy has emerged as a key strategy for its implementation — and for reasons that extend well beyond carbon emissions. First, as Mitchell (2011) has demonstrated, particular energy systems complement and are complemented by particular types of politics. The CCP's approach to domestic politics facilitates the rapid development of nuclear energy, which requires long-term planning (to ensure that its high up-front costs will not be in vain), a technocratic approach (to counter safety concerns) and centralized structures of authority (to mitigate protest and promote regulatory consistency) (DeBoom 2020a). Second, nuclear energy is associated with technological mastery, military might, and nationalist pride. These overtones support the 'Chinese dream of national rejuvenation', a utopian geopolitical vision that Xi has promoted since 2012. Third, nuclear energy is a high-wage industry with an expanding export market in the global South — commercial features that align with the CCP's 'going out' geo-economic strategy and its descendant, the BRI. Finally, nuclear energy is associated with an imaginary of 'limitless' possibility (Cohn 1997; Hecht 2012). This connotation is well-suited to a ruling party that uses economic development as a governmentality strategy and has built its legitimacy around promises of limitless progress (Geall and Ely 2018; Grant 2018; Pow 2018).

The CCP's quest to make China the world's nuclear energy leader is already well underway. Despite connecting its first reactor to the grid only in 1991, China is expected to surpass the US as the world's largest producer of nuclear energy by 2030 (WNA 2019a). Yet Ecological Civilization will require more than rapid reactor construction to achieve its geopolitical potential. Jasanoff (2015, p. 326) argues that sociotechnical imaginaries become 'embedded' and expand beyond their place of origin by latching onto 'tangible things,' including commodities. To implement its nuclear energy strategy, the CCP will need to secure both the foundational commodity of nuclear energy — uranium — and the cooperation of actors who control that

uranium. The CCP's current plans for nuclear energy suggest that China will require 1 million tons of uranium per year by 2050 — an amount equivalent to what the entire world consumed in 2015 (Zhang and Bai 2015). How will the CCP secure this supply of uranium, and how might its strategy for doing so intersect with Xi's characterization of Ecological Civilization as a 'global endeavour'? These questions bring us to the shadow of utopian visions that promise collective life for some: dystopian realities that require collective death of others.

25.5. Ecological Civilization Beyond China: The Necropolitics of the Husab Uranium Mine

Achille Mbembe (2003) developed the concept of 'necro-power' to explain how and why sovereigns exercise violence against some populations in the name of promoting life for other populations. Necro-power refers to 'the capacity to define who matters and who does not, who is *disposable* [emphasis in original] and who is not' (Mbembe 2003, p. 27). Whereas biopolitics is characterized by 'the power to "make" live and "let" die' (Foucault [1976] 2003, p. 241), necropolitics entails 'the power and the capacity to dictate who may live and who must die' (Mbembe 2003, p. 11). Necropolitics and biopolitics are thus 'two sides of the same coin', as Braidotti (2007, p. 2) argues, but they theorize power from radically different starting points. Mbembe inverts the European-centric genealogy of biopower by tracing the genealogy of necro-power through the extractive violence of slavery, colonialism and apartheid. He argues that sovereigns can render such necropolitical violence 'legitimate' because they execute it not against subjects but rather against populations deemed to be 'savages'. These 'savage' populations reside at the 'frontiers' of the state, places 'where the controls and guarantees of judicial order can be suspended...where the violence of the state of exception is deemed to operate in the service of civilization' (Mbembe 2003, p. 24).

Does Ecological Civilization condemn some to death so that others may live? To answer this question, we need to extend our analysis of environmental sovereignty beyond the territorial limits of the Chinese state. China's annual domestic uranium demand has outpaced domestic supply since the mid-2000s. This situation is not due to a lack of domestic uranium resources. China ranks eighth in the world in proven uranium reserves (WNA 2019b). Even with the CCP's ambitious targets for nuclear energy, China could be self-sufficient in uranium through at least 2030 using only currently-operating mines (Zhang and Bai 2015). Yet most of the CCP's

investments in uranium mining over the past 10 years have occurred abroad. By 2019, China's two state-owned nuclear giants, CGN and CNNC, had amassed overseas uranium holdings equal to three times China's total domestic reserves (WNA 2019b).

The Chinese state's single largest source of foreign uranium is the Husab mine in Namibia, which is expected to become the world's second-largest uranium mine when it reaches full production. A \$5.2 billion project, Husab was the largest-ever Chinese state investment in sub-Saharan Africa when it began construction in 2012. It is located in the Namib desert, where annual rainfall rarely exceeds 10 inches and many rural communities rely on aquifers to support their subsistence livelihoods as farmers and herders. The combination of intensified uranium mining and a series of climate change-associated droughts has undermined the sustainability of local aquifers and in turn jeopardized the survival of agriculturally-dependent communities (DeBoom 2017). Uranium mining may also endanger the health of local populations via gale-force winds that can dislodge radioactive dust and toxins from mine tailings and structural failures that can contaminate groundwater (DeBoom 2020a). Yet far from protesting the CCP's exercise in extra-territorial resource ownership — which appears to undermine both its own goals for resource sovereignty and the health and livelihoods of rural communities — Namibia's SWAPO ruling party has endorsed the Husab mine as a 'win-win' project. To make sense of this seemingly perverse outcome, we need to turn, finally, to climate necropolitics.

25.6. Climate Necropolitics and Environmental Sovereignty Futures

Integrating planetary sovereignty, sociotechnical imaginaries, and necropolitics into the framework of climate necropolitics reveals that the Chinese state is not alone in executing the sovereign calculus of who 'may live' and who 'must die'. Reflecting its geopolitical emphasis on 'win-win' cooperation and respect for state-defined sovereignty, the CCP is not imposing Ecological Civilization on the Namibian state. Instead, the CCP has enrolled Namibia's ruling party, SWAPO, in Ecological Civilization by providing it with an opportunity to pursue its own sociotechnical imaginary: a utopian future in which Namibia's resource wealth is harnessed to fuel national development. During the mining license approval process, SWAPO negotiated with CGN to secure a 10 per cent ownership stake in Husab for the Namibian state's Epangelo mining company. As a state-owned entity that prioritizes politics as well as profit, CGN welcomed this

proposal — and, importantly, helped to secure a Chinese government loan to fund Epangelo's stake. Once this loan is repaid, Husab is expected to generate \$170-200 million in annual revenues for the Namibian state, an amount roughly equivalent to 5 per cent of its pre-Husab annual revenues. The Husab loan raises additional sovereignty issues (see DeBoom 2020b), but it is unlikely that Epangelo — which previously operated on annual budget of \$500 000 in an industry in which one haul truck costs \$4 million — would have an ownership stake in a world-leading uranium mine without it.

Husab's benefits for SWAPO extend beyond revenue. Resource nationalism 'is rooted in the question of *who* gets to legitimately speak in the name of the state or the nation, where, and at what scale sovereignty or autonomy is claimed' (Koch and Perreault 2019, p. 617, emphasis in original). Epangelo was created in 2008 in response to rising populism, which SWAPO's leadership interpreted as a threat to the party's longstanding electoral dominance. SWAPO attempted to co-opt these populist sentiments by arguing that problems like unemployment and inequality were caused by an inadequate state role in mining — not, as some populist leaders claimed, by SWAPO's failed leadership. Epangelo, SWAPO officials promised, would end Namibia's status as an 'Eldorado of speculators' by making 'the people of Namibian [sic] meaningful participants in the mining business rather than rent-seekers' (Katali 2011). Today, SWAPO officials cite Husab as the first step toward fulfilling that promise. When I asked one SWAPO leader to explain how increased government revenue from Husab will benefit Namibians, he replied, visibly bewildered by the question, 'government *is* the people. As government benefits, the people are beneficiaries.' This sentiment and others like it suggest that Husab is not only a tool to strengthen SWAPO's electoral dominance; it is also a tool to consolidate the Namibian state — under SWAPO's leadership — as the legitimate guardian of both natural resources and the 'national interest'.

Returning, then, to the question set out at the beginning of this chapter, climate necropolitics reveals that the alliance between the CCP's Ecological Civilization and SWAPO's resource nationalism is not as unlikely as it first seems. Far from undermining one another, these two geo-imaginaries have enabled one another. For the CCP, Husab presents perhaps the best of all possible environmental sovereignty situations. It is a reliable source of uranium to support the

CCP's nuclear energy strategy that does not directly condemn Chinese subjects or environments to mining-associated violence. Even better, the CCP has secured Husab's uranium through 'win-win' cooperation rather than conflict. This is a valuable outcome at a time when Western leaders are accusing China of outsourcing its environmental pollution and threatening the sovereignty of global South states through initiatives like the BRI.

The CCP is not Husab's only beneficiary. Just as the mine fuels the CCP's geopolitical ascendancy, it also fuels SWAPO's own vision for environmental sovereignty: an extractivist future in which the SWAPO-led state uses Namibia's natural resource wealth to consolidate its status as the 'legitimate' representative of the idealized Namibian nation. As for Namibians living near Husab who may lose their livelihoods and their health to intensified uranium mining, it is likely not a coincidence that these communities disproportionately consist of politically-marginalized minority groups. In rendering these populations disposable, SWAPO is also rendering them governable. The result is a mutually-beneficial, trans-scalar exercise in environmental necro-power.

Beyond Ecological Civilization, geographers can use the framework of climate necropolitics to identify emerging spaces and relations of environmental sovereignty and assess the distribution of their geopolitical and environmental consequences. Are planetary sovereignty and the state-based system of environmental sovereignty necessarily incompatible? Climate necropolitics raises the possibility that planetary sovereignty could emerge *through* rather than *in opposition to* state-based sovereignty. Does the persistent allure of nationalism undermine the possibility of planetary sovereignty? Climate necropolitics opens space for considering how an emerging planetary sovereign could use nationalism to cultivate support for its vision of the geopolitical and environmental future at home as well as abroad. Is planetary sovereignty the best option for overcoming the 'green' tragedy of the state system? Climate necropolitics cautions us that changes in the form, character and scale of sovereignty may facilitate rapid mitigative action while simultaneously deepening socio-ecological violence. As the implications of geopolitical and environmental change continue to take shape, transdisciplinary frameworks like climate necropolitics can help geographers think anew about the assumptions of environmental geopolitics — and consider novel possibilities for environmental sovereignty futures.

References

- Agamben, G. (2005), *State of Exception*, Stanford: Stanford University Press.
- Agnew, J. (2017), 'The tragedy of the nation-state', *Territory, Politics, Governance*, **5** (4), 347-50.
- Alexis-Martin, B. (2019), 'The nuclear imperialism-necropolitics nexus: Contextualizing Chinese-Uyghur oppression in our nuclear age', *Eurasian Geography and Economics*, **60** (2), 152-76.
- Anderson, B. (1983), *Imagined Communities*, London and New York: Verso.
- Appadurai, A. (1990), 'Disjuncture and difference in the global cultural economy', *Public Culture*, **2** (2), 1-24.
- Bennett, M.M. (2016), 'Discursive, material, vertical, and extensive dimensions of post-Cold War Arctic resource extraction', *Polar Geography*, **39** (4), 258-73.
- Bouzarovski, S. and M. Bassin (2011), 'Energy and identity: Imagining Russia as a hydrocarbon superpower', *Annals of the Association of American Geographers*, **101** (4), 783-94.
- Braidotti, R. (2007), 'Bio-power and necro-politics', accessed 18 December 2018 at <https://rosibraidotti.com/publications/bio-power-and-necro-politics/>.
- Cavanagh, C.J. and D. Himmelfarb (2015), "'Much in blood and money": Necropolitical ecology on the margins of the Uganda protectorate', *Antipode*, **47** (1), 55-73.
- China Daily* (2007), 'Ecological Civilization', 24 October, accessed 10 March 2019 at www.chinadaily.com.cn/opinion/2007-10/24/content_6201964.htm.
- Cohn, S.M. (1997), *Too Cheap to Meter: An Economic and Philosophical Analysis of the Nuclear Dream*, Albany: SUNY Press.
- Conrad, B. (2012), 'China in Copenhagen: Reconciling the "Beijing climate revolution" and the "Copenhagen climate obstinacy"', *The China Quarterly*, **210**, 435-55.
- Dalby, S. (2013), 'Biopolitics and climate security in the Anthropocene', *Geoforum*, **49**, 184-92.
- Dalby, S. (2014), 'Rethinking geopolitics: Climate security in the Anthropocene', *Global Policy*, **5** (1), 1-9.
- Davies, T. (2018), 'Toxic space and time: Slow violence, necropolitics, and petrochemical pollution', *Annals of the American Association of Geographers*, **108** (6), 1537-53.
- DeBoom, M.J. (2017), 'Nuclear (geo)political ecologies: A hybrid geography of Chinese investment in Namibia's uranium sector', *Journal of Current Chinese Affairs*, **46** (3), 53-83.
- DeBoom, M.J. (2020a), 'Toward a more sustainable energy transition: Lessons from Chinese investments in Namibian uranium', *Environment: Science and Policy for Sustainable Development*, **62** (1), 4-14.
- DeBoom, M.J. (2020b), 'Who is afraid of "debt-trap diplomacy"? Geopolitical perceptions and the multi-scalar geographies of risk', *Area Development and Policy*, DOI pending.
- Delina, L.L. (2018), 'Whose and what futures? Navigating the contested coproduction of Thailand's energy sociotechnical imaginaries', *Energy Research & Social Science*, **35**, 48-56.

- Dittmer, J., S. Moisiso, A. Ingram, and K. Dodds (2011), 'Have you heard the one about the disappearing ice?' *Political Geography*, **30** (4), 202-14.
- Elkind, J. (2019), 'Toward a real green Belt and Road', Report of the Center on Global Energy Policy, Columbia University, 25 April.
- Foucault, M. (1976), *Society Must Be Defended: Lectures at the Collège de France, 1975–1976*, trans. D. Macey (2003), London: Allen Lane, London.
- Geall, S., and A. Ely (2018), 'Narratives and pathways towards an Ecological Civilization in contemporary China', *The China Quarterly*, **236**, 1175-96.
- Geingob, H. (2015), 'Statement by H.E. Hage G. Geingob, President of the Republic of Namibia at the opening of the FOCAC', 7 December.
- Gerhardt, H., P.E. Steinberg, J. Tasch, S.J. Fabiano, and R. Shields (2010), 'Contested sovereignty in a changing Arctic', *Annals of the Association of American Geographers*, **100** (4), 992-1002.
- Grant, A. (2018), 'Hyperbuilding the civilized city: Ethnicity and marginalization in eastern Tibet', *Critical Asian Studies*, **50** (4), 537-55.
- Hansen, M.E., H. Li, and R. Svarverud (2018), 'Ecological Civilization: Interpreting the Chinese past, projecting the global future', *Global Environmental Change*, **53**, 195-203.
- Haraway, D. (1989), *Primate Visions*, New York: Routledge.
- Hecht, G. (2012), *Being Nuclear: Africans and the Global Uranium Trade*, Cambridge, MA, USA: MIT Press.
- Jasanoff, S. (2015), 'Future imperfect: Science, technology and the imaginations of modernity', in S. Jasanoff and S-H. Kim (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago: University of Chicago Press, pp. 1-33.
- Jasanoff, S. and S-H. Kim (2009), 'Containing the atom: Sociotechnical imaginaries and nuclear power in the United States and South Korea', *Minerva*, **47** (2), 119-46.
- Jasanoff, S. (2015), 'Imagined and invented worlds', in S. Jasanoff and S-H. Kim (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago: University of Chicago Press, 321-342.
- Jun, M. and S. Zadek (2019), 'Decarbonizing the Belt and Road: A green finance roadmap', report by Climate Works Foundation, 4 September.
- Katali, I. (2011), 'Media statement', Ministry of Mines and Energy, Government of the Republic of Namibia, 10 May.
- Koch, N. and T. Perreault (2019), 'Resource nationalism', *Progress in Human Geography*, **43** (4), 611-31.
- Kythreotis, A.P. (2012), 'Progress in global climate change politics? Reasserting national state territoriality in a "post-political" world"', *Progress in Human Geography*, **36** (4), 457-74.
- Lyotard, J-F. (1979), *The Postmodern Condition: A Report on Knowledge*, trans. G. Bennington and B. Massumi (1984), Minneapolis: University of Minnesota Press.

- Mann, G. and J. Wainwright (2018), *Climate Leviathan: A Political Theory of Our Planetary Future*, London: Verso Books.
- Margulies, J.D. (2019), 'Making the "man-eater": Tiger conservation as necropolitics', *Political Geography*, **69**, 150-61.
- Mbembe, A. (2003), 'Necropolitics', *Public Culture*, **15** (1), 11–40.
- Mitchell, T. (2011), *Carbon Democracy: Political Power in the Age of Oil*, London: Verso.
- Obama, B. (2014), 'Remarks by the President at U.N. Climate Change Summit', Office of the President of the United States, 23 September.
- Oels, A. (2013), 'Rendering climate change governable by risk: From probability to contingency', *Geoforum*, **45**, 17-29.
- O'Lear, S. and S. Dalby (eds) (2015), *Reframing Climate Change: Constructing Ecological Geopolitics*, New York: Routledge.
- O'Lear, S. (2016), 'Climate science and slow violence: A view from political geography and STS on mobilizing technoscientific ontologies of climate change', *Political Geography*, **52**, 4-13.
- People's Daily* (2015), 'Green hills and clear waters are gold and silver mountains', 8 March, accessed 10 March 2019 at <http://www.cecep.cn/g3621/s7631/t39494.aspx>.
- Pow, C.P. (2018), 'Building a harmonious society through greening: Ecological Civilization and aesthetic governmentality in China', *Annals of the American Association of Geographers*, **103** (3), 864-83.
- Sparke, M. and D. Bessner (2019), 'Reaction, resilience, and the Trumpist behemoth: Environmental risk management from "hoax" to technique of domination', *Annals of the American Association of Geographers*, **109** (2), 533-44.
- Tännsjö, T. (2008), *Global Democracy: The Case for a World Government*, Edinburgh: Edinburgh University Press.
- Tracy, E.F., E. Shvarts, E. Simonov, and M. Babenko (2017), 'China's new Eurasian ambitions: The environmental risks of the Silk Road Economic Belt', *Eurasian Geography and Economics*, **58** (1), 56-88.
- Wendt, A. (2003), 'Why a world state is inevitable', *European Journal of International Relations*, **9** (4), 491-542.
- Whitehead, M., R. Jones, and M. Jones (2007), *The Nature of the State: Excavating the Political Ecologies of the Modern State*, Oxford: Oxford University Press.
- World Nuclear Association (WNA) (2019a), *Plans for New Reactors Worldwide*, accessed 2 June 2019 at <https://www.world-nuclear.org/information-library/current-and-future-generation/plans-for-new-reactors-worldwide.aspx>.
- WNA (2019b), *World Uranium Mining*, accessed 2 June 2019 at <https://www.world-nuclear.org/information-library/nuclear-fuel-cycle/mining-of-uranium/world-uranium-mining-production.aspx>.

- Xi, J. (2017), 'Secure a decisive victory in building a moderately prosperous society in all respects and strive for the great success of socialism with Chinese characteristics for a new era', statement to the 19th CCP National Congress, 18 October.
- Zhang, H. and Y. Bai (2015), 'China's access to uranium resources', Report of the Belfer Center for Science and International Affairs, Harvard University, 26 May.
- Zhang, Y. (2018), 'China and Namibia stride into a new era of comprehensive strategic cooperative partnership — warm congratulations on the great success of President Hage Geingob's state visit to China', statement by the Ambassador of the People's Republic of China to the Republic of Namibia, 5 April.
- Zhou, J. (2006), 'The rich consume and the poor suffer the pollution', interview with Pan Yue, *ChinaDialogue*, 27 October.