

The socioenvironmental state: Political authority, subjects, and transformative socionatural change in an uncertain world

Environment and Planning E: Nature and Space

2018, Vol. 1(4) 688–711

© The Author(s) 2018



Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/2514848618816467

journals.sagepub.com/home/ene**Andrea J Nightingale** 

Swedish University for Agricultural Sciences (SLU), Sweden; Norwegian University of Life Sciences, Norway

Abstract

The 'socioenvironmental state' conceptualisation probes how contested, shifting, emergent boundaries of the state contain the possibilities for transformative change in the Anthropocene. The paper outlines a research programme capable of addressing the questions: who becomes authorised to govern change, who is required to make changes on the ground, and what subjectivities and pathways emerge in the context of rapid rate change? The conceptualisation unpacks three boundaries: state–society, its socionatural emergence, and the relationships between boundary-making and belonging to address these questions and better account for the successes and failures of attempts at governing an uncertain, rapidly changing world. In this analysis, 'environmental change' arises as a stochastic, relational becoming – ecologies and resources are emergent with the social-politics of governing them – suggesting that more analytical attention is required on how 'environmental challenges' and their 'drivers of change' are conceived and delimited. Together, these theoretical insights help reveal the way that the micro-politics of local resource use and the contradictory acceptance and refusals of authority and subjection are not only products of, but also productive of, larger scale political economies, socionatures, governance, and political struggles. The aim is to contribute towards a re-imagination of political authority that begins to capture the complex interplay between our attempts at governing a changing world and the inadvertent authorisations, inclusions, and exclusions that we produce in those efforts. The paper partially illustrates the conceptual ideas with an account of forestry and climate change in Nepal. In a context wherein programmes to govern resources have become of global concern, probing the implications of these points is crucial. It is not only that states govern resources with particular consequences for 'environmental change' or 'sustainability', but also that the act of governing resources (re)produces the socioenvironmental boundaries of the state with profound implications for how future transformations can unfold.

Keywords

Political ecology, state formation, Nepal, feminist theory, authority, belonging, political subjectivity, environmental governance, socionature, Anthropocene

Corresponding author:

Andrea J Nightingale, Department of Urban and Rural Development, Swedish University for Agricultural Sciences (SLU), Ulls väg 27, P.O. Box 7012, Uppsala SE-750 07, Sweden.

Email: andrea.nightingale@sosgeo.uio.no

Introduction

Rapid rate change in the so-called Anthropocene¹ poses new challenges for governing and public authority (Lövbrand et al., 2015). While there are concerted efforts to predict, mitigate, and manage environmental change, it is also increasingly clear that entangled socioenvironmental processes are inherently uncontrollable and largely unpredictable. The global scope of these challenges has prompted calls for supranational governance mechanisms that can supersede nation states to ensure planetary boundaries are not crossed (Folke et al., 2011). At national and sub-national levels, public authority is increasingly hybrid and invested in a wide range of multi-scalar actors that are both 'inside' and 'outside' the state (Swyngedouw, 2010). In this milieu, the state nonetheless continues to be a major player in environmental politics, and new forms of rule and environmental governance processes are emerging that appear to revitalise the state as public authority² (Balachandran et al., 2018).

Together, these trends raise questions about who becomes authorised to govern change, who is required to make changes on the ground, and what subjectivities and pathways emerge. I take three state boundary-making processes – state–society, society–nature, and citizenship–belonging³ – as useful analytical starting points to address these questions and better account for the successes and failures of attempts at governing an uncertain, rapidly changing world. Drawing from work in anthropology and development studies on public authority, combined with political ecology insights on resource governance, and feminist theory insights on subjectivity and socionatures, I follow Mitchell (1991) and query *how* political authority emerges as separate from society, nature from society, and citizens from other kinds of subjects. From these queries, I derive the 'socioenvironmental state',⁴ a conceptualisation of contested, shifting, emergent boundaries of the state and how they contain the possibilities for transformative change. In this analysis, 'environmental change' arises as a stochastic, relational becoming – ecologies and resources are emergent with the social-politics of governing them – suggesting that more analytical attention is required on how 'environmental challenges' and their 'drivers of change' are conceived and delimited. My interest in understanding the mechanisms of change is not driven by a desire to predict and therefore manage the future, but rather to better understand *what* needs governing and how more iterative and dynamic practices of environmental governance can emerge. I argue that it is within contested, state boundary-making processes that possibilities to re-imagine public authority and socionatures lie, and therefore the potential for invigorated, creative responses to environmental challenges.

The political ecology literature on the state has shown how the need to control and manage various aspects of environment/nature has been foundational to modern states and the socionatures that result (Asher, 2009; Bridge, 2014; Harris, 2012; Meehan and Molden, 2015; Mitchell, 1991; Neumann, 2004; Scott, 1998; Wolford et al., 2013). Yet many of these accounts present state–society–nature–citizen boundaries as analytically stable or at least empirically obvious.⁵ Most assume the state is a (pre)defined actor, hold nature as a separate, interacting domain with society, and propound theories of subject formation that overly emphasise either domination or resistance. In contrast, Harris (2017) has recently asked, '[h]ow are resources, objects, and related infrastructures central to refashioning state-society relations, or the crucial boundary work required to delineate what we refer to as the "state" and its evolving capacities?' (90).

My socioenvironmental state argument takes up these questions and shows how boundary-making processes create relational inclusions and exclusions that encompass the non-human, and shape what emerges as 'resources' and 'subjects' in need of governing. These inclusions and exclusions are always spaces of struggle (Camargo and Ojeda, 2017;

Valdivia, 2008), but rather than governing failures, or blockages to managing change, I probe how (ongoing) struggles establish pathways that serve to enable relations of the future (Leach et al., 2010; Stirling, 2015). Struggles over boundary-making processes create the terrains wherein the actors, technologies, subjects, and terms of public authority can be renegotiated, with unpredictable and often contradictory outcomes.⁶ The aim is to contribute to a re-imagination of political authority that can capture the complex interplay between attempts at governing a changing world and the inadvertent authorisations, inclusions, and exclusions produced in those efforts.

In what follows, I first elaborate on how the socioenvironmental state framework opens up new insights for political ecologies of the state by querying the theoretical implications of boundary-making for conceptions of states, natures, and subjects. Next, I focus on three theoretical points: (i) state–society boundaries emerge from contested attempts to claim competence to govern nature/resources and struggles over recognition of those claims; (ii) society–nature boundaries emerge from competition for authority and struggles over who and what belongs,⁷ bringing ‘natural resources’ into being and who is considered capable of governing them; (iii) the exercise of power in an environmental governance domain has opened up new fluid subjectivities, new forms of inclusion and exclusion, and possibilities for transformation. These insights build a performative notion of resources and states to better account for the relational emergence of environmental change, governance, subjectivities, and politics. By shifting the object of analysis to boundary-making, my concept shows how the micro-politics of subjectification, local resource use, and the contradictory adherence to and refusals of authority and subjection are both produced by and productive of wider political economies, socionatures, governance, and political struggles. The theoretical queries above are thus translated into a research programme oriented around: (i) what are the terrains of struggle?; (ii) what new authorities, subjectivities, and resources emerge?; and (iii) how are micro-politics creating new larger scale terrains of struggle and vice versa? Asking these questions through the socioenvironmental state concept holds dynamic relations in view, giving insight into the moments wherein socioenvironmental transformation can occur.

The latter part of the paper shows how viewing forestry, climate change, and state formation in Nepal through the socioenvironmental state framework reveals new terrains of transformation. Nepal has been targeted for international support as politically and environmentally fragile due to rapid rate political and ecological change and thus provides interesting insights into dynamic state–society–nature–citizen boundaries. The case study is intended to be illustrative, rather than exhaustive. What emerges from the theoretical and empirical analysis is a research programme about how govern to what are inherently uncontrollable and unpredictable trajectories of socionatural change.

Political ecologies of the state

Current work engaging the political ecology of state formation highlights the need for a better theorisation of the *socionatural* emergence of public authority, political subjectivities, citizenship, and resource governance (Asher and Ojeda, 2009; Camargo and Ojeda, 2017; Harris, 2012; Meehan et al., 2014; Moore, 2015; Parenti, 2015; Robertson, 2015; Valdivia, 2008; Wolford et al., 2013). Public authority in many respects is both contingent upon and a result of the provision of necessary resources to populations (Bridge, 2014) such as drinking water schemes (Budds, 2013), roads (Rankin et al., 2016), and agricultural support programmes (Sugden, 2009). Similarly, conservation scholars have long argued that

national parks are integral to state-making practices (Devine, 2018; Neumann, 2004). Different logics of rule – scientific wildlife management, conservation objectives, market formation, productive agriculture, etc. – are brought to bear in order to form socionatural and territorial boundaries (Asher and Ojeda, 2009; Roth and Dressler, 2012; West et al., 2006). The humans who are allowed to reside within conservation areas (rangers, managers, tourist operators) reflect wider politics of belonging, rights, recognition, and authority (Roth, 2008; see also Gillespie and Collard, 2015). With greater attention to micro-politics, feminist political ecologists have probed how environmental governance projects entail processes of (re)subjectification, resulting in not only uneven access to and control over resources (O'Reilly, 2006; Sultana, 2009), but also transformations in the social and political significance of gender, race, class, and other intersectional differences through which citizenship and access to resources are fractured (Elmhirst, 2011; Harris, 2006; Mollett and Faria, 2013; Nightingale, 2006).

There is little work, however, that brings these contributions together. I argue that subject–resource–territory boundaries are not stable or simply the effect of political struggles. Empirically, boundaries are often asserted in environmental terms, for example the construction of water scarcity in Israel, which was used as justification for the control of territories where water sources originated, effectively expanding Israeli sovereignty claims into Palestinian lands (Alatout, 2008). Environmental rationalisations for territorialisation moves such as these justify particular population control measures and resource exploitation projects (Asher and Ojeda, 2009; Harris, 2012; Harris and Alatout, 2010; Meehan and Molden, 2015; Peluso and Vandergeest, 2011; Rocheleau, 2015; Wainwright and Robertson, 2003). However, on the ground, more-than-human relations can facilitate or thwart the ambitions of state planners, often in unpredictable ways (Meehan, 2014), with water schemes silting or drying up (Harris, 2012), roads eroding irreparably (Butz and Cook, 2011), or wildlife crossing outside of desired boundaries (Gillespie and Collard, 2015).

Similarly, humans do not necessarily comply, and environmental transformations can offer possibilities to contest or assert alternative territorialisation ambitions (Devine, 2018; Korf and Raeymaekers, 2013; Rocheleau, 2015). Peluso's account of the violent dynamics through which different state and non-state actors control forests, shows how state rule is contingent upon struggles over territory, subjectivities, and socionatures (Peluso, 2009, 2011; Peluso and Vandergeest, 2011). Similarly, Harris (2012) links processes of subjectification with the territorial effects of a large-scale dam and irrigation scheme in southeastern Turkey. She theorises how, through the irrigation scheme, the state undergoes 'important revisions' (26) such that it is '...again cast as geographically differentiated [in her research participant's account] and is read through emergent waterscapes—unequal access to water is fundamental to this state ontology' (32). Thus, through transformations in everyday use of resources and infrastructures, new subjects emerge and the enactment of gender, class, and ethnicity in everyday life take on new significance. State effects are evident as new boundaries between citizens and territories are drawn in the context of environmental governance. These pioneering contributions have drawn attention to the shifting and contingent materiality of the state. If Jessop (2007) has argued that a core quality of states is that they are *territorial*, political ecologists have insisted that they are also *ecological/material* (Bridge, 2014; Harris, 2012; Meehan and Molden, 2015; Moore, 2005), showing how governance of material resources are crucial sites wherein authority is produced (Lund, 2016; Valdivia, 2008). Yet they stop short of evaluating how *environmental resources* ('nature') themselves, as unpredictable, uncontrollable relations, are constitutive of social political relations.

Theorising the socioenvironmental state

Socioenvironmental state boundaries

I want to step back from these insights and use my three boundary-making processes (state–society, its socionatural emergence, and citizenship–belonging) to elaborate how the socioenvironmental state concept can better account for the successes and failures of our attempts at governing a rapidly changing world. To take the first process, political ecological conceptions of the state rely on an assumption that the state is a reasonably stable set of relations such that it is, ‘... a critical actor in shaping “new resource geographies” via its powers of legal and extra-legal coercion’ (Bridge, 2014: 124). While many political ecologists ‘develop notions of territorialisation that exceed those of the state, in order to problematize understandings of access, control and authority as they relate to natural resources’ (Bridge, 2014: 123), they nevertheless have a government-centric understanding of the state and public authority. Political ecologists tend to treat non-state territorial and property making ambitions as *outside* the state, rather than as relations that serve to *constitute* the state.

Conceptualising the state as socioenvironmental refuses this kind of separation of outside and inside, and rather shows how struggles over authority are foundational to state–society boundaries and who and what emerges as requiring governing. Drawing on insights from anthropology and development studies where public authority is an ethnographic puzzle that requires probing competition and collaboration between different multi-scalar institutions (Klem and Suykens, 2018), I follow Lund (2016) ‘... to also capture how governance of vital resources creates statehood, or state quality, in these institutions’ (1200). Clues to how resource governance is complicit in state formation is found in what state agents do (e.g. bureaucrats) (Byrne and Shrestha, 2014); the institutions and agencies through which public authority is exercised and contested (concessions, extension offices, local government offices, traditional chiefs, rebel groups, etc.) (Côte and Korf, 2018; Ferguson and Gupta, 2002; Vandekerckhove, 2011); and the projects developed to ‘improve’ (and control) populations and environments (Camargo and Ojeda, 2017; Li, 2007). Citizens and subjects are produced through the specific resource governance struggles that bring agents, projects, and institutions into relation with authority.

This turn towards ethnographies of the state has pushed political ecologists to explore how resource conflicts are not only on the receiving end of state power, but ‘also constitute[e] the hegemony that allows national and global power to operate’ (Robertson, 2015: 463; see also Asher and Ojeda, 2009; Valdivia, 2008). Yet underlying these political ecology analyses is the assumption that states *have* power (already) and part of that power comes from their ability to control or distribute resources, and assert sovereignty over territories. I draw from feminist conceptualisations of power, that in contrast focus on the relations through which power is exercised (Butler, 1997), and highlight that there are always inadvertent outcomes. Understanding power in a performative, relational manner means that states do not *have* power, rather, the exercise of power and its recognition *produces* ‘stateness’ and subjects, with all the attendant slippages and failures that struggles over authority and belonging create.

Further, for feminists, power over is only one aspect of the exercise of power. All processes of subjection involve a moment of ‘recoil’ (Butler, 1997: 6) wherein power as domination is transformed into the power to act, the power to refuse, or even, a stepping out of hegemonic relations altogether to claim entirely different subjectivities (Nightingale, 2011). By focusing on these moments of boundary-making – i.e. empirical attention to how power is exercised and recognised in assertions of public authority – a feminist understanding of power reveals the moments wherein change can occur. While in many

instances, relations of domination, assertions of historical authority, and sovereignty claims are simply reproduced, in other moments, rather radical reconfigurations of rule result (Lund, 2016).

Making sense of these ruptures is not simply an empirical question. Conceptually, the emergence of state–society–citizen boundaries – of struggles between institutions involved in rights granting, rule making, and enforcement (i.e. public authority) – makes power tangible and accounts for its sometimes surprising effects. These insights give political ecologists new conceptual resources to show how the state emerges as a multi-sited, contradictory, and inconsistent set of effects. State subjectification effects are always partial and result in a (re)negotiation of state–society boundaries, of who/what belongs. By focusing on the recursive processes of authority–recognition, authority–subjectification, the possibilities for the exercise of power to result in unintended outcomes (whether positive or negative) are clear. It is these processes through which re-imagination of public authority can occur.

To return to my concern with governing the so-called Anthropocene, climate change and other rapid rate biophysical changes have already proven to be focal points for such renegotiations of state boundaries. Global geopolitics and struggles for authority shape the Conference of the Parties (COPs) negotiations (Featherstone, 2013), and recursively, the COPs realign geopolitics. The hegemony of the USA in global affairs more widely has been undermined by its refusal to comply with the last two COP agreements (along with refusals to join global consensus on other issues). The uptake and refusals of these agreements are realigning responsibilities, causing new subjects to emerge – those that are ‘vulnerable’ or ‘capable’ – shaping global policies and people’s everyday lives in profound ways (Arora-Jonsson et al., 2016; Bee et al., 2015; Gonda, 2016). Climate change is also fuelling ambiguity over *what* (human–non-human) is changing, the proliferation of new governing institutions, and escalating competition over authority in environmental governance domains (Forsyth, 2013; Nightingale, 2017). By focusing on state–society boundary-making practices, a socioenvironmental state analysis probes how new institutions take on state qualities in order to govern, and shows how these entanglements across scales are not politically and ecologically neutral, but rather create new forms of inclusion and exclusion. In short, there is a need to account for the entanglements and inherent unpredictability of environmental change within state boundary-making. I now turn to a more careful theorisation of such socionatural entanglements.

Socionatural boundary-making

Taking account of socionatural effects brings me to the second boundary-making process: state boundaries are produced through contingent, *socionatural* struggles. Most work on the materiality of the state has emphasised territorial effects (Asher and Ojeda, 2009; Korf and Raeymaekers, 2013; Painter, 2010), the power of ‘things’ (Meehan, 2014), and the capitalist drives that underpin transformations of ecologies within state projects (Moore, 2015; Parenti, 2015), to take account of nature. My starting point is that the state is *produced* through socionatural relations (Harris, 2012; Valdivia, 2008). Taking the state as a socionatural becoming has led Moore (2005) to show the significance of historically entangled social relations, political rule, and ecological transformations for current environmental and political struggles in Zimbabwe. These entanglements suggest new forms of inquiry, ones that need to cross continually between the human and non-human,⁸ probing the cyborg nature (Haraway, 1991) of state effects.

Not only are ‘resources’ productive of authority, and produced *by* authority, but also their material specificities relationally emerge with boundary struggles. Nature is not brought in, nor is it somehow socialised through state effects. Rather, I am arguing for a more profound ontological and epistemological shift in how the state is conceptualised. In order to emerge as separate from society, yet contained within it, socionatural relations also have to be (re)configured, a point which is often not adequately drawn out in political ecologies of the state. State–society boundary-making emerges *within* the reconfigurations of ecological and political relations of territory, land, natural resources used for everyday livelihoods, and opportunities for long-term material accumulation (Bakker and Bridge, 2006; Braun, 2000; Harris, 2012) – yet these attempts at reconfiguration are sometimes undermined or have unexpected effects because of the inherent uncontrollability and uncertainties of the non-human world. The state appears as public authority at least in part because it governs (but cannot control) the unpredictable material foundations of livelihoods and political economies. At the same time, these effects are also embedded within cultural imaginaries, knowledges, sense of belonging, subjectivities, and social relations, which help shape what ‘resources’ *are*, *which* authorities are recognised, and *who* is included, making disentangling the social–political from the natural impossible. As Braun (2005) queries in relation to the ecological properties of urban water, ‘do these properties matter to the material form of the technological networks and bureaucracies that control its movement, or to the narratives, hopes and fears that circulate around it?’ (646). Political ecologies of the state therefore need to focus on the processes through which boundary-making is achieved and how such processes are always already socionatural becomings, with profound implications for what future entanglements are possible.

But my point is not that we simply need to understand how (e.g.) the chemical and physical properties of water shape certain kinds of struggles, technologies, sites, and political institutions to distribute it. Rather, I am arguing that we cannot fully know what nature means for society and the political contestations that result. And because we cannot know, by theorising how political authority emerges through socionatural boundary-making, it demands that we profoundly rethink how we conceptualise the possibilities for political change. The fact that we cannot separate environmental from social change is not simply ‘noise’, or the agency of the more than human, it is also the key to social–political change. Political change can only come about through reconfiguring socionatural boundary-making processes. Climate change makes this point absolutely vital. Climate change is not only a problem of carbon emissions and an over-industrialised society, but it is also a problem our imagination and what we count as ‘alive’ versus ‘inert’ (Ghosh, 2016). The inseparability of social and natural change challenges efforts at prediction of climate change as well as assumptions about the right institutions, scales, and mechanisms for governing climate. To create transformation, we must embrace how contested, shifting, emergent boundaries help to re-imagine political authority and society–environment relations in a rapidly changing world.

Boundary-making and belonging

The third boundary-making process is that of belonging. The linkages between socionatural entanglements and the production of subjects also hold keys to who and what become targets of state rule. Boundary-making practices reveal the processes through which citizenship and belonging – and therefore responsibilities, access to and control over changing socionatural resources – are shaped and contested. Feminist debates on how power operates to produce desires for recognition, belonging, and rights show how

subjectivities encompass both citizenship and wider dimensions of inclusion and exclusion in the state (Krause and Schramm, 2011). Political subjectivities therefore emerge from the socio-natural inclusions and exclusions that arise within state effects, and as such are potent outcomes of the exercise of power, both disciplining (power over), and acts of resistance, refusal, and activism (power to) (Ahlborg and Nightingale, 2018; Nightingale, 2011).

There are two dimensions of belonging I argue are crucial for political ecologies of the state. First, socio-natural boundary-making draws attention to the relational emergence of political authority and citizenship. The ability to grant (or secure) resources for livelihood security is foundational to the aspirations and claims of both ordinary citizens as well as those seeking the authority to govern. Political authorities are recursively constituted in relation to the subjects (human and non-human) they seek to govern – authority always requires recognition (Lund, 2016), just as subjects always need to internalise the operation of power. Belonging (citizenship and membership of polities) emerges from these dynamics of authority and recognition – and as I show in the next paragraph, socio-natural encounters and imaginaries – making it a precarious achievement, such that subjectivities are not stable, but rather another crucial moment of boundary-making.

Second, state making involves producing socio-natural boundaries between what belongs in/to the state and what does not. Competition for authority is not simply competition for power and control, it is also about who defines what humans *and* non-humans are included and which are excluded from rights, responsibilities, and governance. For example, many current struggles over forests are as much struggles over what socio-natural beings (tree species, animals, plants, humans, and so forth) constitute a ‘productive’ forest, as they are struggles over territory. Peluso (2011) captures how struggles over species composition, use of forest resources, and claims to residence are entwined with colonial histories, political economies, state forestry policies, and the histories of military and racial violence through her conceptualisation of ‘political forests’. She shows how ethnicity in West Kalimantan has been tied to the political economy, ecologies, and extraction practices within rubber plantations, such that when racial violence has broken out, some groups changed their relations to forests (and other performances of ethnicity) to claim different ethnic identities and protect themselves from violence (Peluso, 2009). While she does not frame it in these terms, subjectivities in Peluso’s case are produced through socio-natural, embodied spatial interactions with forests (Nightingale, 2011) as well as through social–political relations that extend from the community to national and colonial geopolitics. Understanding the triggers of racial violence in West Kalimantan requires probing how rubber ecologies and ethnicities are co-emergent. Conceptually, citizenship and the territory of the state are constituted in relation to each other and the forms in which they should be made legible for governing and management. Struggles over authority are therefore equally struggles over who/what can and ought to belong.

I want to push these insights further by drawing on feminist theory to articulate the recursive relations between authority and citizenship in terms of political subjectivity. Here, subjectivity is understood somewhat differently than in the governmentality and development literature (Agrawal, 2005) where subject positions and the cultural politics of resistance to those subjectivities are often held analytically separate (Li, 2005; Rose, 1999). Holding subjectivities and cultural politics separately assumes that subjectivation processes produce relatively stable subjects that can be categorised based on relations of domination or resistance. A focus on either domination or resistance cannot capture how both processes occur within the same relation, with rather messy outcomes. For example, Agrawal’s (2005) conceptualisation of environmental subjects formed from dominating conservation discourses, or accounts that emphasise resistance (Devine, 2018; Rocheleau, 2015), leave

little room for people to perform multiple, contradictory subjectivities. In contrast, by theorising agency and recognition to emerge from subjection to power, a performative framing of political subjectivity allows for subjectivities to be dynamic and multiple, changing as power and belonging are exercised (Ahlborg, 2017), and as people move through the political–socio-natural contexts of everyday life (Ahlborg and Nightingale, 2018; Nightingale, 2013). In this formulation, it is possible for people to simultaneously accept and refuse the knowledges, discourses, relations, and practices that attempt to create particular state–subject boundaries. As such, belonging is a dynamic boundary-making process, one that is inseparable from the exercise of power and the socio-natural relations through which subjectivities emerge.

For political ecologies of the state, these insights mean that the micro-politics of the everyday cannot be separated from larger level assertions of sovereignty and public authority and the circulation of capital. Gender, race, caste, and other intersectional subjectivities are not only crucial in terms of shaping access to, control over, and distribution of resources (Rocheleau et al., 1996), but they are also re-inscribed by struggles over authority, recognition, citizenship, and belonging (Elmhirst, 2011; Harris, 2009; Nightingale, 2017). Inclusions and exclusions in governance and everyday resource use are not only justice questions, they also point to the basis of authority making. Struggles over recognition link scales of governing and in doing so, reframe the basis of claims to authority and belonging. It is through these boundary-making practices that the possibilities for social change lie as people adhere to or violate resource governance rules, recognise or refuse authority, make claims to rights and belonging, and struggles over political subjectivities and authority are inscribed within the landscape.

Taken together, these three boundary-making practices lay a foundation for an emergent and empirically grounded conceptualisation of the state. Far more than a backdrop upon which global processes meet local struggles to shape resource politics, asking questions through my socio-environmental state framework helps to show the processes wherein current struggles and boundary-makings shape the possibilities of socio-environmental futures. By conceiving of the state as a socio-natural becoming, the state emerges conceptually and empirically as an ongoing contested domain, one that is not only governing, but is also *constitutive of* the kinds of political and environmental challenges the era of climate change and the Anthropocene throw up.

I now turn to Nepal, a place I know best as an empirical researcher. A full reading of forestry governance through the socio-environmental state framework is the subject of a book length treatment; here my goal is to partially illustrate how the conceptualisation offers fresh insights. The case is based on extended mixed methods fieldwork in six districts collected in 1993–1994, 1997, 1999, and annual fieldwork (1–2 months each) since 2005. The majority of the fieldwork was conducted by the author in Nepali language working with Nepali research associates. Unless otherwise specified, the empirical material has been collected through qualitative interviews at local and central levels, ethnography, and observation. Some of the forest ecological data were collected through aerial photo interpretation and vegetation inventory, including coring of canopy trees to determine age and see past fire events.

Nepal

Background

Nepal has been targeted as a hot spot of environmental change due to predictions of temperature increases and the importance of Himalayan glaciers for river systems across

Asia (Regmi, 2009). Its political history since 1950 has been characterised as a ‘permanent transition’ and ‘ad hoc’ (Baral, 1977 (2006); Byrne, 2018). Four major junctures provide points of reference for the current analysis.

First, in 1950 the ruling Rana oligarchy was overthrown by the king with support from an alliance of political parties who insisted on land reform as a condition of their involvement. This democratic experiment was short lived, and in 1956 the king declared absolute rule and established the so-called democratic ‘partyless’ Panchayat system (Burghart, 1996). From the late 1950s to 1990, stateness took on a new face as the monarchy established the civil service and a network of government offices across the country, along with appointed local Panchayat leaders. In contrast, under the Ranas, public authority was exercised through networks of headmen, authorised to maintain rule and collect taxes in their appointed territories (Regmi, 1988); now the king relied more on his civil service to exercise political authority.

In 1990, after decades of political unrest, underground political parties staged a popular ‘People’s Movement’ that instated multiparty democracy and relegated the king to a limited political role. Competition for political authority was rife amongst the three main political parties after 1990 and took a violent turn when part of the Maoist party launched a bloody ‘People’s War’ in 1996 (Hutt, 2004). The king took advantage of the civil war to claim executive powers, dissolving parliament in 2004 (thus eliminating all local level elected officials – leaving civil servants to take on their roles) (Gellner and Hachhethu, 2008).

Another People’s Movement in 2006 ended the civil war, overthrew the monarchy entirely, and established a federal democracy. Since 2006, violence, competition amongst the political parties, and bureaucratic uncertainty have been the norm. In 2015, the Constitution was adopted amidst protests from groups whose rights were marginalised in the final draft (Nightingale et al., 2018). In 2017, local elections were held for the first time in nearly 20 years, creating a new jurisdictional logic to the government. In the narrative that follows, I work through this history to show how new insights about forest governance and the state emerge when addressing the questions: (i) what are the terrains of struggle?; (ii) what new authorities, resources, and subjectivities emerge?; and (iii) how are micro-politics creating new, larger scale terrains of struggle and vice versa?

Forest governance and state boundaries before 1990: New terrains of struggle

The relationship between forests and public authority has a long history in Nepal (Regmi, 1988), but while most accounts are descriptive about changing policies, viewing forestry through the socioenvironmental state lens reveals how control over the extraction of forest resources was crucial to the assertion of stateness. Forests have been enrolled in new forms of rule, generating new authorities, resources, and subjectivities that have been emergent with wider scale politics and ecologies. I begin here by showing how the establishment of the government Forest Department in 1960 created new terrains of struggle. Promising distribution of forested lands to land-poor farmers and, on the advice of international donor agencies seeking influence in the region to counterbalance communist China and recently independent India, the king nationalised forest lands in 1957.

Forests underwent significant socioecological changes during the Panchayat that opened up possibilities for the radical social and political change witnessed with the 1990 democratic revolution. Local headmen under the Ranas were given control over forests. Recognition of their authority took the form of offerings of food and alcohol in exchange for use of vital forest products (Nightingale, 2003). After nationalisation, some people reacted by over-harvesting (Messerschmidt, 1987), believing that their forests had been taken away; an act

I would characterise as both acknowledgement and refusal of the king's and Forest Department's authority. In other places, forest degradation is attributed to overtaxation by headmen during the Rana rule, and forest cover improved after nationalisation as taxation rates declined (Mahat et al., 1986). In both scenarios, forests were deeply bound up in state boundary-making practices and the exercise of power. Forests were one of the territories within which what belonged to the state – and whether that meant local people had access or not – were struggled over as the Forest Department sought to assert its authority over that of local headmen, and forest resources declined or improved as governance shifted. Attempts to transform governance by the civil service were uneven at best. Oral accounts indicate local headmen relinquished their control over forests to newly established District Forest Offices as late as the 1980s in some places.

In the 1980s, forests again created new terrains for struggle of public authority, generated by ecological conditions and protests of the monarchy's absolute rule. International alarm over degradation of Himalayan slopes led to widespread plantation efforts across the Middle Hills⁹ (Metz, 2010). New forms of state–society boundaries emerged as government forest officers attempted to fence, plant trees, and exclude local villagers from using forest resources in what were now called Panchayat forests, a symbolic acknowledgement of their embeddedness in village livelihoods. This change in nomenclature (from government to Panchayat¹⁰) signalled the ongoing struggle over authority to govern resources necessary for everyday life in rural Nepal. On the one hand, the monarchy and Forest Department were loath to relinquish their dominion over forest governance, and on the other hand, they acknowledged that they could not adequately control dispersed populations of users (and thus the ecological conditions they desired).

Donors collaborated with the government to establish projects, placing field staff and offices in districts to help manage activities (Gilmour and Fisher, 1991). The involvement of donors in grassroots projects marked the beginning of the donor's own (unstated claims) to governing nature for the global common good. During this time, the Forest Department expanded its network of offices around the country with a strong emphasis on promoting scientific forestry and employing more rangers (a new civil service job and subjectivity) to enforce harvesting restrictions. State–society boundaries emerged around the civil service; government officers were distinguished from local residents by their uniforms, rural offices, moving them regularly to prevent them from 'going native', and giving them policing powers in forested territories. Access to and control over forests distinguished civil servants from ordinary citizens, local residents from migrants, and state versus village lands. Under the Ranas, in contrast, dispersed networks of elites exercised power through patronage relations (Baral, 1977 (2006); Regmi, 1988). While patronage certainly did not disappear (and in many respects continues to be an important basis of public authority today; Dahal, 2008), the king initially tried to establish his rule based on national control, enforced by his burgeoning civil service and police force.

Recognition of these new forms of public authority was slow in coming. Local people refused national (and donor) control by violating plantations. It was only after research showed that ecological reasons could not adequately explain plantation failures, that the sabotage of them by local people became evident (Gilmour and Fisher, 1991). Donor projects, in collaboration with some of the District Forest Offices, responded by including local elites in plantation decision-making, a process of renegotiating state–society–nature boundary-making that profoundly transformed socionatures as the projects matured throughout the 1990s. Many elites had been former headmen who had seen their state-like authority slowly erode (their role in collecting taxes was eliminated much later than their control over forests). Panchayat forestry engaged them now as 'local people', placing

them firmly within 'society'. Local elites reacted to shifts in their subjectivity by transforming ecologies to assert authority both by encouraging local people to sabotage plantations, and by their later commitments to ensuring plantations succeeded.

In this way, viewing forestry through the socioenvironmental state lens reveals how efforts at controlling and improving nature were deeply entangled in ongoing struggles over authority at the grassroots in Nepal. New forms of belonging emerged that both cemented the state boundary at the 'local user' (a new subjectivity)–'Forest Department' interface and laid a foundation for later claims to shared governance of forests. Changing the trajectory of forest cover change required dynamic realignments of political power at all levels, serving to create new boundaries between the state and society, ones that both served to include the civil service in the state and exclude local elites, but that also began a process of dispersing public authority to local people.

Community forestry (CF) and new state boundaries: Links between micro and macro socionatural politics

By the late 1980s, struggles over authority and belonging in Panchayat forestry triggered the reinvention of the programme as CF. CF partially displaced authority to govern forests from the Forest Department to local resource users in an effort to balance protection with livelihood needs (GON/MFSC, 1995). The government retained ownership of the land, but extraction rights and responsibility for enforcing rules were given to village committees, working closely with Forest Office rangers and usually donor projects. This arrangement – written into policy in the Master Plan for the Forest Sector 1988 and adopted as law under the 1993(1996) Forest Act (GON/MFSC, 1995) – was the outcome of dynamic and iterative struggles between 1984 and 1995 that were waged within forests, District Forest Offices, and national-level negotiations. Forest ecologies were not only the terrain of these struggles, they also facilitated them and transformed them as a result. Most plantations were monocultures of blue pine (*Pinus wallichiana*), in part because *P. wallichiana* regenerates easily, and in part because timber production was prioritised rather than multi-use. Pines provide timber and leaf litter, but cannot be used for fodder, unlike hardwood species, and are therefore of more limited use to local users. Forest ecologies transformed as plantations took root – or failed to flourish – and the extent to which local people invested in CF activities. Many local users were sufficiently subjected by the new programmes and discourses of 'Nepal's wealth is her green forests', that state and citizen promoters of CF activities burgeoned across the Middle Hills. CF was significantly expanded after the 1990 democratic revolution, and today over 18,000 user-groups are spread across the country.

While drawing out the uncontrollability and unpredictability of socionatural change here is not easy (in part because forests change relatively slowly without major disturbances like fire or clear cutting), unexpected changes in species composition, rights to certain resources, and the composition of management committees, entangled in stochastic, relational becomings to shape the trajectory of forest and political change at the grassroots. Conceptually, focusing on society–nature boundaries reveals how CF created new forms of inclusion and exclusion. Many early projects succeeded in reforesting denuded slopes without plantations because blue pines and other disturbance species self-regenerate when grazing pressure is controlled. Today stands of blue pines are still prominent in some parts of the Middle Hills. These stands significantly changed the possibilities for future transformations. Pine needles are acidic, changing soils, and inhibiting the growth of hardwood, deciduous species which are also endemic to Nepal (Stainton, 1972). Attempts

at planting deciduous species were far less successful than pines, especially oaks which are desired for tool making, fodder, and firewood. Thus, the narrow focus on growing trees for 'improvement' had unexpected ecological effects.

Struggles over belonging and socionatures are paramount in a socioenvironmental state reading of CF. Forest ecologies were recursively embedded within struggles over subjectivity and authority between the Forest Department, donor projects, local elites (who usually controlled committees), and ordinary resource users. Problems with compliance to rules, and the active involvement of donors, pushed the programme to include a focus on fulfilling people's basic needs and involving them in management committees. Rules were oriented around two important boundary-making practices: (i) delimiting user-group members from other nearby residents (citizen–subject boundaries) and (ii) establishing rules over resource extraction that curtailed the practice, intensity, or timing of traditional forest uses (society–nature boundaries). Some local users exercised power by actively resisting curtailment of their extraction rights (while others championed them). My own fieldwork indicates that people whose livelihoods were the most precarious (usually Dalit families, some women) were most likely to violate harvesting regulations (Nightingale, 2005). The CF user-group's and Forest Department's authority were continually challenged and recognised as disputes were waged both within the forest and committee meetings, and everyday practices slowly changed the ecology of the forest and availability of desired resources. In these ways, the initial attempts at static, centralised control of forests failed, and it was only when new actors claimed enough space to demand a stake in management that more dynamic forms of state governing could emerge.

These socionatural struggles over belonging were successful in reshaping the goals of CF to be oriented more towards inclusion, equitable distribution of resources, and capacity building for local committees, rather than reforestation alone. Throughout the 1990s, encouraged by donor activities and Maoist activism, demands for inclusion in decision-making executive committees increased from people on the basis of marginalised subjectivities – women, ethnic groups, and Dalits. And as these groups articulated their rights more forcefully, new management priorities for the promotion of fodder and non-timber species emerged, although the focus on timber remains an important socionatural boundary struggle in CF user-groups today. Together, these struggles and transformations have resulted in significant increase in forest cover across Nepal but also more recently, new forms of non-timber market development and illegal extraction (Paudel, 2016).

Enmeshed with these transformations in socionatural trajectories at the grassroots, the micro-politics of CF contributed to national-level state boundary-making effects. After 1990 and the establishment of multiparty democracy, newly authorised national politicians were keen to show their support for democratic control over resources at sub-national levels by backing CF. Around the same time, donor projects funded the development of a national network of CF user-groups in an effort to facilitate shared learning around forest governance. What donors and the government did not anticipate was that this network, FECOFUN, would emerge as a powerful competitor for public authority and act as a mouthpiece for 'civil society'¹¹ demands for rights and distributive justice. FECOFUN advocated on the basis that they were *not* the state and has been celebrated for opening up the terrain of political authority in Nepal as a result (Ojha, 2009). Viewing FECOFUN through my socioenvironmental state lens, however, also points to the way these struggles over authority asserted new emancipatory subjectivities ('CF user-group member', 'women leaders', 'FECOFUN member') and struggles for inclusion at multiple scales that expanded notions of citizenship. New boundaries between the state and society emerged as potent

claims to sharing governance, speaking for the people, and promotion of democratic practices became the hallmarks of FECOFUN's claims to authority.

Political subjectivities emerged that further complicated state–society–nature citizen boundaries. Grassroots public authority became closely linked to the abilities of user-group leaders to mitigate disputes, enforce rules, and liaise with Forest Department officials. This kind of exercise of power (and corresponding subjectivities) marked a distinct departure from the past when headman governed through fear, extraction of surplus labour, and absolute authority. In the era of inclusion, the most effective CF leaders exercised public authority in part by taking account of user-group members' diverse needs, improving forest ecologies, and engaging in national networking through FECOFUN. Furthermore, belonging to a user-group provided an important neutral political subjectivity in contexts where political party membership would otherwise serve to polarise people; this was particularly important during the civil war (Nightingale and Sharma, 2014). Regardless of how effective they were, CF user-groups became so embedded within village life that people do not consider them part of the state, even though without Forest Department consent, CF user-groups would be unable to officially operate. This is in contrast to forest user-groups that have been established in Protected Areas where interviews indicate that villagers even 20 years later still consider the user committees part of the Protected Area activities rather than a village institution.

Re-imaginings of political authority: Possibilities for transformative change

The struggles over authority and political subjectivities within CF re-imagined political authority within Nepal and created powerful rallying points in the recent political changes. The transformation of Panchayat forestry from a project to grow trees to the social forestry emphasis in CF resulted in new forms of belonging both locally and nationally with corresponding political subjectivities and terrains upon which authorities arose and were contested. The 2006 revolution was accomplished under a mandate of 'distributive justice' and a clear understanding by a wide cross section of Nepali society that 'justice' can only be accomplished by gender and caste equality and the provision of public services (Ojha, 2009). FECOFUN was a potent focal point for the exercise of new political subjectivities at the local, regional, and national levels throughout the 1990s and 2000s, and successfully asserted its claims to public authority by demanding involvement in discussions over the new Forest Strategy in 2012 and other aspects of federal restructuring after 2006 (Ojha et al., 2016). FECOFUN continues to be widely recognised for its authority to speak for local level village users by international donor projects and its leaders are regularly invited to international climate negotiations to represent Nepali, non-state interests, for example. The activities of FECOFUN and CF projects, combined with the ability of forests to grow, contributed to new political subjectivities and a different basis for belonging in Nepal that have powerfully contested the legacies of autocratic rule (Ojha, 2013) and radically transformed state–society boundaries.

This tale of political and ecological transformation, emancipatory subjectivities, and new state–society boundaries must be tempered by a reading that explores how CF produces inclusions *and* exclusions. CF fosters political subjectivities based on particular ideas of equity, participation, and self-regulation which are not simply emancipatory, but rather are mobilised by a variety of actors to exercise authority. CF user-groups are formed on the basis of spatial proximity to forestlands and historical land use claims, and many groups are dominated by higher-caste, higher-class people. The poorest of the poor (most often

Dalits), are excluded from user-groups or marginalised when they are included (Neupane, 2003; Thoms, 2008). Attending to state–society–citizen boundary-making process, these disparate claims can be seen as struggles over belonging. On the ground, these processes are hashed out within forests and user-group committees by cutting trees, harvesting out of turn or from others' forests, asserting management priorities, and demanding user-group executive committee leadership positions.

The successes of CF have been to reforest many parts of Nepal, empower new kinds of political leaders (women, marginalised ethnicities, people from non-elite families), and to reclaim forests as the economic basis of village livelihoods (rather than state accumulation). Its failures have almost direct corollaries: CF forests have become sites of illegal timber and gravel harvesting by unholy alliances of CF executive committees, contractors, political party and civil society leaders, and government staff (Nightingale et al., 2018). Many of Nepal's most marginalised people are either not included in CF user-groups because they are landless, excluded from executive committees on the basis that they lack 'capacity', or are unable to exclude other users from their forests because of their marginal subjectivities. And the government has not given up its ongoing attempts at reasserting centralised control over forests (Sunam et al., 2010). Therefore to assume that CF has simply resulted in the transplantation of 'conservation subjects' (Agrawal, 2005) and 'good governance' into the hills of Nepal fails to recognise the unpredictable qualities of the political subjectivities and ecological changes that have emerged through struggles over authority, belonging, and socationatures within CF.

Climate change and political authority

I want to finish my reading of forestry and socioenvironmental state transformation by briefly exploring the state boundary-making processes emanating from climate change programmes. The development of formal climate change policies and plans (National Adaptation Plan of Action, Reducing Emissions from Deforestation and Degradation (REDD+), etc.) was facilitated by international consultants, but most were delayed by the political transition (Nightingale, 2017; Ojha et al., 2015). Deliberately kept 'apolitical' and claiming cross cutting relevance, climate change efforts brought political leaders and civil servants from different sectors together with important civil society leaders, notably FECOFUN, into multi-stakeholder platforms when new policies and programmes were devised. The REDD+ programme, designed to pay poor countries to sequester carbon and achieve wider development, poverty alleviation, and adaptation goals, was one of the first.¹²

In a context where competition for authority was vociferous at all levels in Nepal (Byrne and Shrestha, 2014), REDD+ assembled a national 'REDD Cell' to debate different mechanisms of benefit sharing. Government Village Development Committees were bypassed in favour of CF user-groups as the preferable local implementing institution because of political instability within the former (Khatri et al., 2018). REDD+ programmes, through FECOFUN facilitators, created management groups that encompassed up to 12 CF user-groups to measure carbon and impose new harvesting restrictions on targeted forests. Through the programme, CF groups are given more responsibility and access to new forms of resources (payments for carbon), while simultaneously their management goals are subsumed to national and international level priorities and oversight. These new rights and responsibilities are not politically neutral. Rather, REDD+ user-groups became sites for struggles over authority and new political subjectivities as people became 'carbon managers', CF user-groups became accountable to

audits originating from outside their own committees and management plans, and REDD+ executive committee members gained political authority over that of CF leaders. Nationally, the goals of the REDD cell were to decentralise benefit sharing from REDD+ payments, but these goals were transformed into political party and other leadership struggles within the cell and within grassroots committees. These terrains of struggle have partially eroded the sense of ownership and interdependence between people and forests fostered under CF (Khatri et al., 2018).

Viewing these changes in the scale and focus of forest governance through the socioenvironmental state framework helps reveal boundary-making processes that might otherwise be less visible. REDD+ projects have undermined demands for inclusion in CF by more marginalised members of Nepali society (micro-politics) (Ahlborg and Nightingale, 2012; Khatri et al., 2018) and given the Forest Department new justification for recentralising forestry governance. Local level users are now sandwiched between international carbon targets, Forest Department aspirations of centralised control, newly (2017) elected local governments keen to control forests as a political and economic basis for public authority, and rapidly changing ecological qualities. Into this mix are dynamic changes in livelihood strategies that have shifted people's use of forests and commitment to voluntary collective management, and rapidly changing terms of engagement by international donors. Concomitantly, climate change has rather abruptly disappeared as a national development priority issue. Local Adaptation Plans of Action (LAPA) that were poised for implementation in 2014 were shelved due to the 2015 earthquakes and the 2017 elections. LAPA projects are on hold until new actors within Nepal's changing and increasingly kaleidoscopic landscape of public authority decide to seize them as an important agenda (or to eliminate them altogether). Meanwhile, changes in temperature, rainfall, timing of the monsoon, and receding of glaciers proceed apace, seemingly undisturbed by the struggles over authorities, subjectivities, and ecologies happening within Nepal.

On their own, each one of these changes transforms the exercise of power; repositions people in relation to user-groups and their resources; and generates new rights, responsibilities, and ecologies. Together, they signal a volatile terrain of struggle, wherein earlier successes at re-imagining more democratic political authority over forests are being renegotiated. Attempts at political neutrality and multi-stakeholder inclusion serve to mask the magnitude of these negotiations. External observers believe climate change poses the greatest risk to Nepal, whereas I would argue that my analysis points to these socionatural entanglements and boundary-making processes as the greatest risks for Nepalis. It is unclear what trajectory these struggles, new subjectivities, and socionatures are on, but understanding Nepal's environmental challenges requires exploring these emergent boundaries. The drivers of change are not simply political, nor are they simply biophysical. Rather, socioenvironmental boundary-making processes are shaping who governs change and with what consequences for inclusion, exclusions, and state transformation.

Conclusion

In this paper, I posed three crucial questions in the face of rapid rate socioenvironmental change: who becomes authorised to govern change, who is required to make changes on the ground, and what subjectivities and pathways emerge? At the moment, most environmental change efforts are focused on prediction and management. The socioenvironmental state conceptualisation takes another tack to tackle the inherent unpredictability and uncertainties that suggest more dynamic approaches to change are required. I have argued that it is

through state–society–nature–citizen boundary-making processes that socioenvironmental pathways emerge and transform, and while historical trajectories have profound implications for the present, they cannot predict the future.

My conceptualisation shows how contested, shifting, emergent boundaries of the state contain the possibilities for transformative change by highlighting three boundary-making processes – state–society, society–nature, and citizenship–belonging. These boundaries are terrains of struggle, spaces wherein the re-negotiation and reconfiguration of human and more-than-human relations serve to reauthorise existing actors, institutions, and practices of rule, and to open them up to new people, practices, and logics. Many times, both of these pathways are simultaneous; feminist conceptualisations of power show how the exercise of public authority always contains acceptance and refusals that mean power is rarely simply dominating. Power is exercised through micro- and macro-politics and relations, resulting in continuities and inconsistencies in rule that refuse inside–outside separations when talking about the state. It is through micro-politics that these terrains of struggle hold open possibilities to transform subjectivities and ‘resources’, for new ones to emerge, and for the basis of public authority to change. As such, the state is conceptualised as a *socionatural* becoming, a set of relations that encompass the human and non-human through which public authority is exercised, rather than an actor or institution capable of exerting power and sovereignty. This formulation begins to articulate a more consistent theorisation of the state within political ecology, one wherein the exercise of power and its recognition produces ‘stateness’ and subjects, with all the attendant paradoxes and failures that struggles over authority and belonging create.

Methodologically, it suggests an ethnographic approach to state formation, wherein everyday struggles over resources, belonging, and authority are shown to shape wider trends of *socionatural* change. Empirically tangible questions emerge from the framework including: (i) what are the terrains of struggle?; (ii) what new authorities, subjectivities, and resources emerge?; and (iii) how are micro-politics creating new larger scale terrains of struggle and vice versa? Using these questions to reanalyse research on Nepal’s forestry reveals how efforts at controlling access to forests have been inextricably bound up in struggles over public authority and belonging for decades. Profound transformations in stateness have occurred, from authoritarian rule to ‘multi-stakeholder’ logics. New terrains of struggle have emerged as successive governments have asserted rights to rule in part by controlling land and natural resources used for everyday livelihoods and long-term material accumulation. Yet, forest ecologies and local residents resist such control as it is difficult to fence and monitor large tracts of forest and unpredictable *socionatural* relations undermine centralised efforts to shape environmental change.

Viewing these successes and failures as socioenvironmental state boundary-making processes shows how struggles over public authority have opened up space to assert new subjectivities, place new demands for local control over forests, and to refuse the narrow focus on improving tree cover that centralised forest governance sought to achieve. As a result of these micro-politics, government- and donor-sponsored projects at larger scales have taken up social forestry goals (including globally), potent ‘civil society’ networks, and leaders have emerged, along with political subjectivities that allow people to claim rights and responsibilities on a different basis than the patronage relations of the past. Patronage continues apace, but now the public discourse is suffused with demands for distributive justice; local level political rights; and gender, caste, and ethnic equality. In short, ‘stateness’ now has a very different face, one that encompasses new actors at multiple scales asserting public authority and new subjectivities upon which people claim rights.

Climate change programmes are again causing renegotiations of the scales, practices, and institutions that exercise political authority within Nepal. Analysing these empirical changes within the socioenvironmental state framework shows how ecologies and resources are stochastic becomings that are relationally emergent with the social-politics of governing them, pointing analytical attention to how micro-politics produce multi-scalar inclusions and exclusions. Boundary-making produces public authority at least in part because it governs, but cannot control, climate impacts (including how benefit sharing plays out on the ground). But these attempts are also shifting subjectivities, desires for belonging and rights, and historical resource use practices. From these processes, what ‘forest resources’ *are* is shifting. They have gone from stands of timber under Panchayat forestry, to multi-use ecosystems under CF, to carbon sinks under REDD+. And these shifts have occurred enmeshed within the changing constellation of actors claiming authority over forest management or rights to use forest resources, changing the terms upon which Nepalis claim citizenship and belonging. The analysis helps reveals these mechanisms of change and highlights that it is perhaps not forest resources that require management, but rather more dynamic, iterative debate about the stochastic becomings centred around forests.

The theoretical and empirical insights gained from my socioenvironmental state conceptualisation are crucial for efforts to respond to climate change and other environmental challenges of the Anthropocene. Environmental governance ‘best practices’ cannot override the entanglements described here. Rather, they become enrolled in them, creating new terrains of struggle, new forms of belonging, and political authority that are rooted in socioenvironmental relations instead of political or environmental ones alone. But rather than boundary-making processes becoming a new tool for prediction, management, and control, I have argued that what nature means for society and political contestations cannot be fully known. Fleshing out the trajectories of change emerging from state–society–nature–citizen boundary-making processes is an empirical question, one that requires more questions than answers, and attention to the possibilities that continually emerge from the contradictory effects of power. While it seems clear that the state will continue to be an important player in environmental politics, taking it as a set of dynamic boundary-making processes through which stateness and public authority emerge, shows how the state is inherently a terrain of struggle. It is through these struggles that possibilities for transformation lie. As such, this analysis suggests that there is too much emphasis on control and management of the Anthropocene, and not enough on iterative, dynamic responses. Creating hope for transformative futures requires fostering governance logics wherein debate, struggle, and micro-politics are taken seriously as vectors of change, rather than inconvenient distractions to effective political authority.

Highlights

- The socioenvironmental state conceptualises the processes of change to understand what needs governing and who is authorised to govern.
- Exploring state–society–nature–citizen boundary-making processes can better account for the successes and failures of governing an uncertain, rapidly changing world.
- Contested, state boundary-making processes contain possibilities to re-imagine public authority and socionatures, and possibilities for revitalised responses to environmental challenges.
- The socioenvironmental state links the micro-politics of subjectification, resource use, and struggles over authority to wider political economies, socionatures, and governance struggles.

- The analysis outlines a research programme on what are inherently uncontrollable and unpredictable trajectories of socio-natural change.

Acknowledgements

This paper has been substantially improved by critical comments from Heléne Ahlborg, Muriel Côte, Tim Forsyth, Stacy Pigg, Linus Karlsson and the careful reading of three anonymous reviewers. I would like to thank Bishnu Maya Pariyar, Jeevan Shrestha, Jyoti Hamal, Tulasi Sigdel, Raj Kumar Rai, Pushpa Hamal, and Pema Norbu Lama for research support at different times during the fieldwork. Their insights, companionship, and discussions over translations have been invaluable. Conversations with Manohara Khadka, Hemant Ojha, Dil Khatri, Naya Sharma Paudel, Dinesh Paudel, Peter Branney, Mary Hopley, Sabin Ninglekhu, Anil Bhattarai, and Bharat Pokarel have also enhanced my understanding of forestry governance and state formation over the last 10 years. Colleagues including Benedikt Korf, Catherine Boone, Nancy Peluso, Shalini Randeria, Gabriela Valdivia, Christian Lund, Koen Vlassenroot, Tobias Hagmann, Tim Raeymeakers, Bart Klem, and Bert Suykens, and participants in the Governance at the Edge of the State PhD courses (2014–2018) have enriched my understanding of the conceptual material.

Declaration of conflicting interests

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

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The research for this article was supported by a Swedish Research Council Development grant (Vetenskapsrådet) 2015-03323, a British Academy International Partnership and Mobility Award (2012–2016), a Royal Society of Edinburgh International Exchange Award (2011–2012), a Canadian SSHRC International Opportunities Fund Award (2010–2011), two Royal Geographical Society Small Grants (2005, 2008), US National Science Foundation (NSF) Graduate Fellowship (1995–2001), US National Science Foundation Doctoral Dissertation Improvement Grant No. 9900788, a Fulbright-Hays Doctoral Dissertation Award (1999), a Doctoral Dissertation Fellowship from the University of Minnesota Graduate School (2000), and the MacArthur Scholars Program on Global Change, Sustainability and Justice (1993–2001). The writing of the paper was supported by a Riksbankens Jubileumsfond sabbatical grant SAB17-0727.

ORCID iD

Andrea J Nightingale  <http://orcid.org/0000-0001-5343-9576>

Notes

1. The Anthropocene, while widely embraced within political ecology and geography as a signifier of the current epoch of large scale, rapid rate anthropogenic more-than-human transformation, remains a debated concept within the geological sciences wherein the term originated (Steffen et al., 2011; Zalasiewicz et al., 2017)
2. In this paper I use political authority and public authority interchangeably to invoke their broadest meaning: governing and ordering of public resources and relationships.

3. I derived these from the literature and my empirical research. They are not intended as comprehensive. Notably, society-technology/infrastructure is another boundary-making process, and while here I implicitly subsume it under socionatures (technology and infrastructure being part of the non-human), it would be useful to conceptualise their effects more carefully.
4. Throughout the paper I use 'socioenvironmental' and 'socionatural' interchangeably. Socionatural reflects my conceptual stance in debates that unpack the Cartesian divide between society and nature (Braun, 2005; Nightingale, 2014). 'Socioenvironmental' signals my desire to speak to a wider audience for whom 'socioenvironmental' is more recognisable term.
5. Gramscian accounts often conceptualise the state as an unfinished project, but nevertheless assume the state is already counterpoised to civil society, rather than exploring how the state-civil society distinction arises.
6. Angel and Loftus (2018) argue something similar in relation to the state and environmental justice interventions. However, their theorisation is focused more on how the state facilitates or blocks environmental justice demands, rather than my more generic point here about how the possibilities for social change lie within socionatural boundary-making processes.
7. Struggles over knowledge are also important but I do not develop that point here having done so elsewhere (Eriksen et al., 2015; Nightingale, 2005, 2016, 2017).
8. Rocheleau's (2015) notion of networked power similarly conceptualises these entanglements as emergent. Her formulation, however, fails to explain how power is contradictory and stops short of conceptualising how assemblages are animated. My argument deliberately avoids the idea of assemblage because I find it does not analytically expose the processes through which entangled relations emerge as a nexus of struggle, nor how boundary-making occurs. By drawing from feminist theories of power and subjectivity, my conceptualisation is able to show how particular kinds of 'assemblages' become possible.
9. Nepal's topographic variation is categorised into three main zones: the Terai, or low land plains; the Middle Hills with mountains up to approximately 3000 metres; and the Himal, or snow covered peaks.
10. Government forests excluded extraction activities and existed alongside Panchayat forests and now, CF.
11. FECOFUN and other non-governmental networks in Nepal dub themselves civil society.
12. Observers have remarked the + dimensions were required to make mitigation goals for developing countries palatable considering their historically miniscule greenhouse gases emissions.

References

- Agrawal A (2005) *Environmentality*. Durham, NC and London: Duke University Press.
- Ahlborg H (2017) Towards a conceptualization of power in energy transitions. *Environmental Innovation and Societal Transitions* 25: 122–141.
- Ahlborg H and Nightingale AJ (2012) Mismatch between scales of knowledge in Nepalese forestry: Epistemology, power, and policy implications. *Ecology & Society* 17: 16.
- Ahlborg H and Nightingale AJ (2018) Theorizing power in political ecology: The where of power in resource governance projects. *Journal of Political Ecology* 25: 381–401.
- Angel J and Loftus A (2017) With-against-and-beyond the human right to water. *Geoforum* (in press).
- Alatout S (2008) 'States' of scarcity: Water, space, and identity politics in Israel, 1948–59. *Environment and Planning D: Society and Space* 26: 959–982.
- Arora-Jonsson S, Westholm L, Temu BJ, et al. (2016) Carbon and cash in climate assemblages: The making of a new global citizenship. *Antipode* 48: 74–96.
- Asher K (2009) *Black and Green: Afro-Colombians, Development, and Nature in the Pacific Lowlands*. Durham, NC: Duke University Press.
- Asher K and Ojeda D (2009) Producing nature and making the state: Ordenamiento territorial in the Pacific lowlands of Colombia. *Geoforum* 40: 292–302.
- Bakker K and Bridge G (2006) Material worlds? Resource geographies and the 'matter of nature'. *Progress in Human Geography* 30: 5–27.

- Balachandran G, Mallard G, Arewa O, et al. (2018) Governing capital, labor, and nature in a changing world. In: IPSP (ed.) *Rethinking Society for the 21st Century: Report of the International Panel on Social Progress: Volume 2: Political Regulation, Governance, and Societal Transformations*. Cambridge: Cambridge University Press, pp. 491–522.
- Baral LR (1977 (2006)) *Oppositional Politics in Nepal*. New Delhi: Abhinav Publications.
- Bee BA, Rice J and Trauger A (2015) A feminist approach to climate change governance: Everyday and intimate politics. *Geography Compass* 9: 339–350.
- Braun B (2000) Producing vertical territory: Geology and governmentality in Late Victorian Canada. *Ecumene: A Journal of Cultural Geographies* 7: 7–46.
- Braun B (2005) Environmental issues: Writing a more-than-human urban geography. *Progress in Human Geography* 29: 635–650.
- Bridge G (2014) Resource geographies II: The resource-state nexus. *Progress in Human Geography* 38: 118–130.
- Budds J (2013) Water, power, and the production of neoliberalism in Chile, 1973–2005. *Environment and Planning D: Society and Space* 31: 301–318.
- Burghart R (1996) *The Conditions of Listening: Essays on Religion, History, and Politics in South Asia*. Oxford: Oxford University Press.
- Butler J (1997) *The Psychic Life of Power*. Stanford, CA: Stanford University Press.
- Butz D and Cook N (2011) Accessibility interrupted: The Shimshal road, Gilgit-Baltistan, Pakistan. *Canadian Geographer* 55: 354–364.
- Byrne S (2018) ‘From our side rules are followed’: Authorizing bureaucracy in Nepal’s ‘permanent transition’. *Modern Asian Studies* 52: 971–1000.
- Byrne S and Shrestha G (2014) A compromising consensus? Legitimising local government in post-conflict Nepal. *International Development Planning Review* 36: 435–453.
- Camargo A and Ojeda D (2017) Ambivalent desires: State formation and dispossession in the face of climate crisis. *Political Geography* 60: 57–65.
- Côte M and Korf B (2018) Making concessions: Extractive enclaves, entangled capitalism and regulative pluralism at the gold mining frontier in Burkina Faso. *World Development* 101: 466–476.
- Dahal DR (2008) The ‘mahadeshi’ people: Issues and challenges of democracy in the Nepal Terai. In: Gellner DN and Hachhethu K (eds) *Local Democracy in South Asia: Microprocesses of Democratization in Nepal and its Neighbours*. Delhi: Sage, pp. 128–149.
- Devine JA (2018) Community forest concessionaires: Resisting green grabs and producing political subjects in Guatemala. *The Journal of Peasant Studies* 45: 565–584.
- Elmhirst R (2011) Introducing new feminist political ecologies. *Geoforum* 42: 129–132.
- Eriksen SH, Nightingale AJ and Eakin H (2015) Reframing adaptation: The political nature of climate change adaptation. *Global Environmental Change* 35: 523–533.
- Featherstone D (2013) The contested politics of climate change and the crisis of neo-liberalism. *ACME: An International Journal for Critical Geographies* 12: 44–64.
- Ferguson J and Gupta A (2002) Spatializing states: Toward an ethnography of neoliberal governmentality. *American Ethnologist* 29: 981–1002.
- Folke C, Jansson Å, Rockström J, et al. (2011) Reconnecting to the biosphere. *AMBIO* 40: 719.
- Forsyth T (2013) Community-based adaptation: A review of past and future challenges. *Wiley Interdisciplinary Reviews: Climate Change* 4: 439–446.
- Gellner DN and Hachhethu K (2008) *Local Democracy in South Asia: Microprocesses of Democratization in Nepal and Its Neighbours*. Delhi: Sage.
- Ghosh A (2016) *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press.
- Gillespie K and Collard RC (2015) *Critical Animal Geographies: Politics, Intersections and Hierarchies in a Multispecies World*. New York: Routledge p.222.
- Gilmour DA and Fisher RJ (1991) *Villagers, Forests and Foresters: The Philosophy, Processes and Practice of Community Forestry in Nepal*. Kathmandu: Sahayogi Press.

- GON/MFSC (1995) Forest act 1993 and forest regulations 1995. In: Conservation MoFaS (ed). Kathmandu: Government of Nepal. .
- Gonda N (2016) Climate change “technology” and gender: Adapting women to climate change with cooking stoves and water reservoirs. *Gender, Technology and Development* 20: 1–20.
- Haraway DJ (1991) *Simians, Cyborgs and Women: The Reinvention of Nature*. New York: Routledge.
- Harris LM (2006) Irrigation, gender, and social geographies of the changing waterscapes of southeastern Anatolia. *Environment and Planning D: Society and Space* 24: 187–213.
- Harris LM (2009) Gender and emergent water governance: Comparative overview of neoliberalized natures and gender dimensions of privatization, devolution and marketization. *Gender, Place & Culture* 16: 387–408.
- Harris LM (2012) State as socionatural effect: Variable and emergent geographies of the state in Southeastern Turkey. *Comparative Studies of South Asia, Africa and the Middle East* 32: 25–39.
- Harris LM (2017) Political ecologies of the state: Recent interventions and questions going forward. *Political Geography* 58: 90–92.
- Harris LM and Alatout S (2010) Negotiating hydro-scales, forging states: Comparison of the upper Tigris/Euphrates and Jordan River basins. *Political Geography* 29: 148–156.
- Hutt M (2004) *Himalayan ‘People’s War’: Nepal’s Maoist Rebellion*. London: C. Hurst and Co p.322.
- Jessop B (2007) *State Power: A Strategic-Relational Approach*. Cambridge: Polity Press.
- Khatri DB, Marquardt K, Pain A, et al. (2018) Shifting regimes of management and uses of forests: What might REDD+ implementation mean for community forestry? Evidence from Nepal. *Forest Policy and Economics* 92: 1–10.
- Klem B and Stuykens B (2018) The politics of order and disturbance: Public authority, sovereignty, and violent contestation in South Asia. *Modern Asian Studies* 52: 753–783.
- Korf B and Raeymaekers T (2013) Violence on the margins: States, conflict and the borderlands. *Palgrave Series in African Borderlands Studies*. New York: Palgrave Macmillan US, p. 289.
- Krause K and Schramm K (2011) Thinking through political subjectivity. *African Diaspora* 4: 115–134.
- Leach M, Scoones I and Stirling A (2010) *Dynamic Sustainabilities: Technology, Environment, Social Justice*. New York: Earthscan.
- Li TM (2005) Beyond “the state” and failed schemes. *American Anthropologist* 107: 383–394.
- Li TM (2007) *The Will to Improve: Governmentality, Development, and the Practice of Politics*. Durham, NC: Duke University Press.
- Lövbrand E, Beck S, Chilvers J, et al. (2015) Who speaks for the future of Earth? How critical social science can extend the conversation on the Anthropocene. *Global Environmental Change* 32: 211–218.
- Lund C (2016) Rule and rupture: State formation through the production of property and citizenship. *Development and Change* 47: 1199–1228.
- Mahat TBS, Griffin DM and Shepherd KR (1986) Human impact on some forests of the middle hills of Nepal. Part 2. Some major impacts before 1950 on the forests of Sindhu Palchok and Kabhre Palanchok. *Mountain Research and Development* 6: 325–334.
- Meehan K and Molden OC (2015) Political ecologies of the state. In: Agnew JA, Mamadouh V, Secor A, et al. (eds) *The Wiley Blackwell Companion to Political Geography*. Cambridge: John Wiley & Sons, pp. 438–450.
- Meehan KM (2014) Tool-power: Water infrastructure as wellsprings of state power. *Geoforum* 57: 215–224.
- Meehan KM, Shaw IGR and Marston SA (2014) The state of objects. *Political Geography* 39: 60–62.
- Messerschmidt DA (1987) Conservation and society in Nepal: Traditional forest management and innovative development. In: Little PD, Horowitz MM and Nyerges AE (eds) *Lands at Risk in the Third World: Local-Level Perspectives*. Boulder, CO: Westview Press, pp. 373–397.
- Metz J (2010) Downward spiral? Interrogating narratives of environmental change in the Himalaya. In: Guneratne A (ed.) *Culture and the Environment in the Himalaya*. London and New York: Routledge, pp. 17–39.
- Mitchell T (1991) The limits of the state: Beyond statist approaches and their critics. *American Political Science Review* 85: 77–96.

- Mollett S and Faria C (2013) Messing with gender in feminist political ecology. *Geoforum* 45: 116–125.
- Moore DS (2005) *Suffering for Territory: Race, Place and Power in Zimbabwe*. Durham, NC and London: Duke University Press.
- Moore JW (2015) *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso Books.
- Neumann RP (2004) Nature-state-territory: Toward a critical theorization of conservation enclosures. In: Peet R and Watts M (eds) *Liberation Ecologies: Environment, Development, Social Movements*, 2nd ed. London and New York: Routledge, pp. 195–217.
- Neupane H (2003) Contested impact of community forestry in equity: Some evidences from Nepal. *Journal of Forestry and Livelihoods* 2: 55–62.
- Nightingale AJ (2003) Nature-society and development: Cultural, social and ecological change in Nepal. *Geoforum* 34: 525–540.
- Nightingale AJ (2005) ‘The experts taught us all we know’: Professionalisation and knowledge in Nepalese community forestry. *Antipode* 34: 581–604.
- Nightingale AJ (2006) The nature of gender: Work, gender and environment. *Environment and Planning D: Society and Space* 24: 165–185.
- Nightingale AJ (2011) Bounding difference: Intersectionality and the material production of gender, caste, class and environment in Nepal. *Geoforum* 42: 153–162.
- Nightingale AJ (2013) Fishing for nature: The politics of subjectivity and emotion in Scottish inshore fisheries management. *Environment and Planning A* 45: 2362–2378.
- Nightingale AJ (2014) Society-nature. In: Lee R, Castree N, Kitchin R, et al. (eds) *Sage Handbook of Human Geography*. London: Sage, pp. 120–147.
- Nightingale AJ (2016) Adaptive scholarship and situated knowledges? Hybrid methodologies and plural epistemologies in climate change adaptation research. *Area* 48: 41–47.
- Nightingale AJ (2017) Power and politics in climate change adaptation efforts: Struggles over authority and recognition in the context of political instability. *Geoforum* 84: 11–20.
- Nightingale AJ, Bhattarai A, Ojha HR, et al. (2018) Fragmented public authority and state un/making in the ‘new’ republic of Nepal. *Modern Asian Studies* 52: 849–882.
- Nightingale AJ and Sharma JR (2014) Conflict resilience among community forestry user groups: experiences in Nepal. *Disasters* 38: 517–539.
- Ojha H (2013) Counteracting hegemonic powers in the policy process: critical action research on Nepal’s forest governance. *Critical Policy Studies* 7: 242–262.
- Ojha HR (2009) Civic engagement and deliberative governance: The case of community forest users’ federation, Nepal. *Contributions to Nepali History and Society* 14: 303–334.
- Ojha HR, Ghimire S, Pain A, et al. (2015) Policy without politics: Technocratic control of climate change adaptation policy making in Nepal. *Climate Policy* 415–433.
- Ojha HR, Khatri DB, Shrestha KK, et al. (2016) Can evidence and voice influence policy? A critical assessment of Nepal’s forestry sector strategy, 2014. *Society & Natural Resources* 29: 357–373.
- O’Reilly K (2006) “Traditional” women, “modern” water: Linking gender and commodification in Rajasthan, India. *Geoforum* 37: 958–972.
- Painter J (2010) Rethinking territory. *Antipode* 42: 1090–1118.
- Parenti C (2015) The 2013 ANTIPODE AAG lecture the environment making state: Territory, nature, and value. *Antipode* 47: 829–848.
- Paudel D (2016) Re-inventing the commons: Community forestry as accumulation without dispossession in Nepal. *The Journal of Peasant Studies* 43: 989–1009.
- Peluso NL (2009) Rubber erasures, rubber producing rights: Making racialized territories in West Kalimantan, Indonesia. *Development & Change* 40: 47–80.
- Peluso NL (2011) Emergent forest and private land regimes in Java. *Journal of Peasant Studies* 38: 811–836.
- Peluso NL and Vandergeest P (2011) Political ecologies of war and forests: Counterinsurgencies and the making of national natures. *Annals of the Association of American Geographers* 101: 587–608.
- Rankin KN, Nightingale AJ, Hamal P, et al. (2016) Roads of change: Political transition and state formation in Nepal’s agrarian districts. *The Journal of Peasant Studies* 45: 280–299.

- Regmi M (2009) Climate change issues of Nepal: Challenges and perspectives for future generations. *Progress in Environmental Science and Technology* 2: 67–68.
- Regmi MC (1988) *An Economic History of Nepal 1846–1901*. Varanasi: Nath Printing House.
- Robertson M (2015) Environmental governance. In: John A, Virginie M, Anna JS and Joanne S (eds) *The Routledge Handbook of Political Ecology*. New York: Routledge. pp. 557–566.
- Rocheleau D, Thomas-Slayter B and Wangari E (1996) *Feminist Political Ecology: Global Issues and Local Experiences*. New York: Routledge.
- Rocheleau DE (2015) Networked, rooted and territorial: Green grabbing and resistance in Chiapas. *The Journal of Peasant Studies* 42: 695–723.
- Rose N (1999) *Powers of Freedom: Reframing Political Thought*. Cambridge: Cambridge University Press.
- Roth RJ (2008) “Fixing” the forest: The spatiality of conservation conflict in Thailand. *Annals of the Association of American Geographers* 98: 373–391.
- Roth RJ and Dressler W (2012) Market-oriented conservation governance: The particularities of place. *Geoforum* 43: 363–366.
- Scott JC (1998) *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.
- Stainton JDA (1972) *Forests of Nepal*. New York: Hafner Publishing.
- Steffen W, Grinevald J, Crutzen P, et al. (2011) The Anthropocene: Conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A* 369: 842–867.
- Stirling A (2015) From controlling ‘the transition’ to culturing plural radical progress. In: Scoones I, Leach M and Newell P (eds) *The Politics of Green Transformations*. London: Routledge, pp. 72–85.
- Sugden F (2009) Neo-liberalism, markets and class structures on the Nepali lowlands: The political economy of agrarian change. *Geoforum* 40: 634–644.
- Sultana F (2009) Fluid lives: Subjectivities, gender and water in rural Bangladesh. *Gender, Place and Culture* 16: 427–444.
- Sunam R, Banjade M, Paudel N, et al. (2010) Can bureaucratic control improve community forestry governance? In: *ForestAction Nepal Discussion Paper*. Kathmandu: ForestAction.
- Swyngedouw E (2010) Apocalypse forever? *Theory, Culture & Society* 27: 213–232.
- Thoms CA (2008) Community control of resources and the challenge of improving local livelihoods: A critical examination of community forestry in Nepal. *Geoforum* 39: 1452–1465.
- Valdivia G (2008) Governing relations between people and things: Citizenship, territory, and the political economy of petroleum in Ecuador. *Political Geography* 27: 456–477.
- Vandekerckhove N (2011) The state, the rebel and the chief: Public authority and land disputes in Assam, India. *Development and Change* 42: 759–779.
- Wainwright J and Robertson M (2003) Territorialization, science and the colonial state: The case of Highway 55 in Minnesota. *Cultural Geographies* 10: 196–217.
- West P, Igoe J and Brockington D (2006) Parks and peoples: The social impact of protected areas. *Annual Review of Anthropology* 35: 251–277.
- Wolford W, Borras SM, Hall R, et al. (2013) Governing global land deals: The role of the state in the rush for land. *Development and Change* 44: 189–210.
- Zalasiewicz J, Waters CN, Wolfe AP, et al. (2017) Making the case for a formal Anthropocene epoch: An analysis of ongoing critiques. *Newsletters on Stratigraphy* 50: 205–226.