NEW GOVERNANCE ARRANGEMENTS AT THE INTERSECTION OF CLIMATE CHANGE AND FOREST POLICY: INSTITUTIONAL, POLITICAL AND REGULATORY DIMENSIONS

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This article investigates emerging governance arrangements at the intersection between forest management and climate policy. The authors deploy the symposium’s three-dimensional framework to describe and evaluate developments within two distinct policy sectors (forestry/climate change adaptation and mitigation) at several levels of governance (bi-national, national, and sub-national) to explore the nature and operation of the emerging governance arrangements, and assessing and measuring change within these arrangements over time. Drawing on four contemporary case studies from the US and Canada, New Zealand, British Columbia and Alaska, the authors discern little evidence of a generalized, linear trend from ‘government to governance’. Instead, they conclude, across institutional, political and regulatory dimensions of governance, a more variegated and diverse picture emerges. Their analysis also lends support for the Trubek and Trubek (2007) hypothesis that emerging governance arrangements typically interact with extant ones through modalities of rivalry, complementarity and transformation.

INTRODUCTION

For policy-makers and governance theorists alike, climate change presents challenges that are in many ways sui generis. The complexity of climate change governance, particularly at the global level, has ushered in new theories of governance that depart from or substantially modify prevailing approaches (Keohane and Victor 2010; Bulkeley and Newell 2010; Biermann et al. 2010). In tackling the key questions of where, by whom, how and why climate governance takes place (Bulkeley and Newell 2010), these emerging theories paint an increasingly nuanced picture of the manner in which climate change is being tackled in different contexts by ever-fluctuating constellations of actors globally, regionally, nationally and locally (Backstrand 2008; Biermann et al. 2009; Harrison and Sundstrom 2010; Lidskog and Elander 2010; Kanowski et al. 2011).

This paper seeks to build on this scholarship. Much climate change governance literature is focused at the global level, particularly in the context of the United National Framework Convention on Climate Change and its Kyoto Protocol. Less emphasis has been given to governance arrangements taking shape at the regional, national and sub-national levels in the shadow of these global machinations. Not only are these emerging governance arrangements critical to the ultimate efficacy of the global response; they also represent a rich vein for governance research. Among other things, such initiatives are often highly polycentric embodying many of the putative attributes of ‘new governance’ including participation and power-sharing, multi-level interaction,
Thematical, this paper is concerned with emerging governance arrangements that involve forests and forest resources in climate change mitigation and adaptation. Forest-climate interactions are complex and can dampen or amplify the impacts of climate change (Bonan 2008). For these reasons, forests figure prominently in the climate change debate, and are critically important to mitigation and adaptation efforts (Ravindranath 2007; Streck et al. 2008). Mitigation, in this context, refers to the ability of forests to counteract climate change while adaptation refers to the ability of forests to adjust to climate change stressors. Though often approached separately by governance initiatives, forest mitigation and adaptation can be synergistic and complementary (Ravindranath 2007; IPCC 2007; Mastrandrea et al. 2010). There is significant ongoing debate concerning how each is best achieved (Wellstead et al. 2006; Johnson et al. 2006; Joyce et al. 2008).

What follows is a comparative study of four climate-related forest governance arrangements chosen to apply and test the theoretical governance model at issue in this symposium with a view to addressing the three research questions posed by symposium organizers (set out in part I and discussed in detail of part IV below: see also Tollefson et al., 2012). These case studies were selected mindful of a variety of considerations and realities. An initial priority was to find putatively ‘new’ governance exemplars that grapple with concerns at the nexus of climate change and forest policy at differing sub-global jurisdictional levels (regional, national and sub-national). The arrangements that exist tend to be nascent in nature, sparsely documented, and little studied. Another consideration was our desire to identify cases that reflect differing instances of governance ‘leadership’. As such, one of our cases is led by a national government, two by sub-national governmental units, and a fourth by an industry-led coalition. As such, these cases are complementary to and offer a contrasting scale of analysis to the cases employed in other articles in this symposium. A final methodological consideration was our desire to compare forest policy-related governance initiatives that are primarily responsive to climate change mitigation with those that are mainly concerned with climate change adaptation. The original research for this piece draws on extensive primary documentation and close involvement by practitioners familiar with the cases profiled.

The paper is in four parts. Part I reviews the current state of governance theory as it relates to climate-related forest governance regimes. Part II profiles our four case studies. Part III discusses and analyses our case studies along the three governance dimensions as elaborated in the symposium overview. Finally, part IV offers concluding thoughts on the implications of the foregoing for climate governance theory, framed around the three key research questions identified in the symposium overview (see Tollefson et al., 2012).

PART I: GOVERNANCE THEORY AND CLIMATE CHANGE

Within the global climate change governance literature, scholarship has tended to cluster into two relatively distinct camps (Bulkeley and Newell 2010). Regime theory scholars argue that international climate negotiations and instruments can be explained through scrutiny of the interplay amongst states and interstate coalitions, international institutions and NGOs, and structural factors. Recent derivations of this approach include work by...
Keohane and Victor who claim that global climate change governance is best understood as a ‘regime complex’ in which a cluster of sub-regimes are loosely aligned or connected (Keohane and Victor 2010). On the other hand, global governance scholars seek to capture and understand the role and significance of players and factors that have often languished beyond the focal range of regime theory. These scholars endeavour to clarify the ‘multi-level and multi-arena nature of climate governance’ by exploring the multiple sites (domestic, transnational, and private sector) in which climate governance is occurring (Bulkeley and Newell 2010, p. 13; Biermann et al. 2010).

There is also a growing literature exploring the interaction between forest governance and climate governance ‘writ large’ (Agrawal et al. 2008; Biermann et al. 2009; Cashore 2009; Gunningham 2009). This literature echoes many of these same themes, including the need to be mindful of the multi-level nature of climate and forest governance; of the functioning of forest governance across multiple scales and venues; and of the complex interactions between traditional state-centric forest governance and ‘networked, “bottom up”, public-private and market-based governance initiatives’ (Kanowski et al. 2011, p. 113; see also Cadman 2011).

Collectively, this emerging work is enhancing our understanding of the landscape of climate governance by underscoring the need for theorists and policymakers alike to grapple with the complex, multi-scale nature of governance, the growing role of non-state actors and institutions, and newly-constituted venues of governance. It also suggests important research questions concerning how and why certain forms of climate governance emerge in specific settings.

This paper builds on this body of work by exploring the theoretical significance for climate governance of four case studies that document emerging governance arrangements addressing the mitigative and adaptive potential of forests at a variety of sub-global levels. We also address and offer some conclusions on the significance and implications of our case studies in terms of the overarching questions posed by Tollefson et al., 2012:

1. Whether and to what extent is polycentric governance associated with the emergence of informal institutions, a dissipation of state power, and the predominance of soft law;
2. Whether and to what extent does the institutional dimension of governance constrain or predetermine outcomes in the political and regulatory dimensions;
3. Whether, and to what extent, relationships between the emerging governance arrangements we have profiled and extant legal regimes can be understood in terms of the concepts of rivalry, complementarity and transformation (as per Trubek and Trubek 2007).

PART II: CLIMATE GOVERNANCE AND FORESTS CASE STUDIES

The first two case studies profiled in this part focus on the role of forests in climate change mitigation: New Zealand’s recent experience in developing and implementing a national carbon emissions trading regime and an industry-led initiative to develop a bi-national (US-Canada) forest carbon standard. We then present our two climate change adaptation cases, both of which are newly emerging, sub-national initiatives. The first is a predominantly science-driven initiative led by the Province of British Columbia’s Ministry of Forests and Range; the second is a much broader strategic exercise carried out under a mandate from the Governor of the State of Alaska.
New Zealand ETS

Our first case study concerns the governance arrangements surrounding negotiation and enactment of a national Emissions Trading System (ETS) in New Zealand. The history of the NZ ETS is complex, dating back to New Zealand’s decision to ratify and implement ensuing commitments under the Kyoto Protocol (Bertram and Terry 2010). Development of the NZ ETS began in earnest in December 2006, when the then-Labour government, after abandoning plans for a carbon tax, launched a broad public consultation (New Zealand Ministry of Environment 2006; Bullock 2009). This consultation was led by the Ministry of the Environment and coordinated by the Treasury Department. Soon thereafter, the Labour government established a polycentric Climate Change Leadership Forum (the Forum) to advise it on the design of a NZ ETS (New Zealand Ministry for the Environment 2010). The Forum had 33 members drawn from public, private and NGO sectors.

In the autumn of 2008, these processes culminated in the Labour government securing parliamentary approval for a national ETS through passage of the Climate Change Response (Emissions Trading) Amendment Act. Soon thereafter, Labour was defeated by the National Party, whose campaign platform included a commitment to ‘moderate the ETS’ (National Party of New Zealand and New Zealand ACT Party 2008).

The new government moved quickly to establish a parliamentary committee (the ‘ETS Review Committee’). Its report to Parliament largely affirmed prevailing climate change science and the utility of implementing NZ’s Kyoto obligations by means of an ETS-based policy instrument styled along the lines proposed by Labour. Despite this, it soon became apparent that the National Party government remained committed to its goal of moderating the ETS. In short order, it introduced and secured passage for legislation that diluted Labour’s ETS law (which many had criticized as being an overly timid policy response to climate change). The new legislation passed by a close 63–58 parliamentary vote, enabled by a side-deal the government negotiated to gain the support of the Maori Party (Bullock 2009). The changes were largely aimed at reducing the impact of the new regime on major emitters. The legislation included a NZ$25 price cap on pre-2012 emissions and provisions that postponed the ETS regime’s application to major industrial and agricultural operators (Bertram and Terry 2010). Neither of these changes had been recommended by the ETS Review Committee.

The ETS that ultimately emerged was not a ‘true’ cap-and-trade system in that it did not ‘cap’ total emissions during the transition period (2010–2012), nor did it limit the use of internal or external allowances and credits (Bertram and Terry 2010 p. 16). Its net effect, at a projected carbon price of NZ$30/ton, is expected to generate emission reductions of around 1 per cent from business-as-usual (Bertram and Terry 2010). In the absence of a cap a recent World Bank report predicts that it will ‘...be challenging to keep the ETS target in line with New Zealand’s international commitments...to reduce emissions by 10 per cent below 1990 levels by 2020’. (Kossoy and Ambrosi 2010, p. 24).

The breadth of the NZ ETS is unique. Unlike comparable national and regional ETS schemes, it covers all sectors, including agriculture, energy, industry, fishing, forestry, liquid fossil fuels (transport), synthetic gases, and waste (Bertram and Terry 2010). The direct inclusion of forestry in the NZ ETS is also unique. In most other jurisdictions with extensive forest resources, voluntary offset frameworks have been preferred on the basis that they create opportunities for forest mitigation through the voluntary development and sale of project credits (for example, US Senate/House climate change...
The development of the NZ ETS through its various iterations was centrally managed by successive governments using conventional consultative processes. While the Labour government’s initial foray into this policy realm had a polycentric appearance, business interests (including forest landowners and large GHG emitters) heavily influenced key political decisions emerging from the process. These lobbying efforts are credited with influencing a variety of key policy design and implementation decisions made by successive governments including: (1) employing an ETS rather than a carbon tax; (2) eschewing an emissions cap; (3) allocating generous free allowances to private firms; (4) delaying application of the ETS to key economic sectors; (5) assigning ownership of forestry credits in the ETS; and (6) introducing a price cap (Bertram and Terry 2010). The National Party adopted a more overtly monocentric approach to policy development than Labour. This is reflected in its abandonment of broad public consultations in favour of a more politically constrained “expert-based” approach embodied in the ETS Review Committee. However, the significance of this change in approach should not be overstated, as both governments exhibited strong tendencies to attend to the interests of key economic sectors, including forests and agriculture.

It remains uncertain whether the ETS will be monitored and enforced in a rigorous fashion. Currently, the Ministry of Economic Development has overall responsibility for the ETS, including compliance and enforcement. Commentators suggest that the incentives to circumvent the system, at this juncture, are low as most participant corporations are sizeable players with opportunity and capacity to pass on compliance-related costs to consumers (author communication with Simon Terry November 2010). A broad governmental review of the scheme’s architecture and operation is pending.

Forest Carbon Standards Committee

Our second case study is an industry-led governance arrangement that originated in late 2008, faltered in 2010 (when its membership decisively rejected a proposed voluntary carbon standard), and was suspended in 2011. The genesis of this initiative occurred when a coalition of US and Canadian forest industry and foresters’ associations established the Forest Carbon Standards Committee (FCSC). The overarching goal of the FCSC was to create a unified carbon standard, establishing forest carbon accounting rules that aligned with the interests of forest owners and managers. The intention was that the standard ‘become a model upon which national or sub-national standards could be patterned’ (FCSC 2010a; FCSC 2011).

Institutionally, the FCSC initiative was quite formal in nature, operating with a clear mandate, fixed membership, official committees and defined adoption procedures (FCSC 2010a). In developing this standard, the FCSC followed procedures prescribed by the American National Standards Institute (ANSI) to ensure that the emerging standard would receive swift accreditation for use in the United States and in Canada. Its architecture included a fifty-three-member technical committee, as well as a leadership committee, secretariat, integration committee and five task committees. The leadership committee’s main role was to provide strategic oversight, while the secretariat was charged with drafting based on recommendations from the task committees. Internal responsibility for ratifying the draft standard was vested in the technical committee, after which it was to be forwarded to ANSI for final approval (FCSC 2008a; American Forest & Paper Association 2008).
While the leadership committee and secretariat were comprised exclusively of industry representatives, the technical committee’s membership was more polycentric. FCSC rules required that its membership ‘...be sufficiently diverse to ensure reasonable stakeholder balance without dominance by a single interest category. Members represent forest landowners, forest products manufacturers, conservation organizations, carbon traders, academia, state agencies, tribal nations, and other interests’ (FCSC 2010a, p. 2). The polycentric aspirations of this rule were not realized: the committee only recruited one indigenous member, and participation by environmental NGOs and the academic community was limited (FCSC 2008b). Ultimately, therefore, while the FCSC was formally committed to a relatively polycentric model of interest representation, its overall composition in combination with majority voting rules allowed industry interests to dominate. For example, a poll taken at the last face-to-face meeting of the technical committee led to adoption of a ‘permanence’ definition of 50 years, half what had been advocated by non-industry participants (FCSC 2010d, p. 2).

In mid-2010, a draft standard was submitted for approval to the full technical committee. It was defeated by a vote of 32 to 9, with only 62 per cent of eligible members returning their ballots. In response, the secretariat withdrew the draft standard, with the FCSC leadership committing to undertake further work to resolve outstanding issues (FCSC 2010c). Intriguingly, the defeated draft standard, in key respects, aligned closely with industry interests and values (FCSC 2010b). The draft standard contained guidelines employing a mix of performance-based and management-based approaches. Where management approaches were prescribed, operators were given the flexibility to employ equivalent methodologies (FCSC 2010b). Requirements with respect to sustainability were similarly flexible. (FCSC 2010b, p. 30). Nonetheless, many industry members, concerned that the standard was too onerous, voted against the draft alongside others who refused to support it because it was too weak. (FCSC 2010e).

In January 2011, about six months after the draft standard was voted down, FCSC leadership decided to put its standard development efforts into abeyance. A key factor contributing to this decision was the declining policy relevance of the standard in the face of waning domestic political momentum with respect to the adoption of national cap-and-trade systems both in the US and Canada. However, factors internal to the FCSC also played a role. In the lead-up to the critical technical committee vote, several key members (including two of its most active environmental NGO representatives) resigned from the process provoking the leadership committee to speculate that developing a consensus standard of this type might not be possible outside a formal state-led formalized policy process, given the diverse interests involved (FCSC 2011, p. 3; FCSC 2011, p. 9).

While the FCSC initiative has been suspended and as such is arguably a ‘failed’ governance arrangement, it remains an instructive early non-state exemplar of carbon offset standard setting with parallels to other certification and labeling initiatives including more established and previously studied governance arrangements such as the International Organization for Standardization’s 14000 Series, and global standards developed by the Forest Stewardship Council and the Marine Stewardship Council (see Tollefson et al. 2008; Cadman 2011).

British Columbia Future Forest Ecosystems Initiative
The purpose of British Columbia’s Future Forest Ecosystems Initiative (FFEI) is to adapt the provincial forest and range management framework, including legislation, policy, planning and guidance, to a changing climate (BC Ministry of Forests and Range 2008).
The FFEI is the central adaptation platform for work by the Ministry of Forests and Range (the Ministry) on forest-related climate change issues. Several contextual features are important to understanding the nature and significance of the FFEI. One is the relatively activist approach adopted by the BC government on climate change generally. BC has been a national leader, developing a comprehensive provincial climate action plan ([Climate Action Plan 2008](#)) as well as implementing various regulatory initiatives, including: greenhouse gas reporting regulations; carbon neutrality requirements for the public sector; and North America’s first consumption-based carbon tax (Duff 2008). Most of these initiatives focus on climate change mitigation, although via the FFEI and more generally (see [Preparing for Climate Change: British Columbia’s Adaptation Strategy 2010](#)), the BC government has also turned its attention to adaptation.

Another important contextual feature is the profound impact that climate change has already had on BC forests. In recent decades, British Columbia’s forests have experienced a number of significant wild fires (2003 and 2009) and a major Mountain Pine Beetle infestation affecting 14.5 million hectares between 1990 and 2008 ([Government of British Columbia 2010a](#); [Natural Resources Canada 2010](#)). Both were attributed to a changing climate and both have had profound impacts on the province’s economy ([Government of British Columbia 2010a](#)). These impacts generated momentum to re-examine prevailing models and assumptions of provincial forest management ([British Columbia Ministry of Forests and Range 2006](#); [Woods et al. 2010](#)). The FFEI is the state-led governance arrangement through which this re-examination is to occur.

The FFEI began as a three-year initiative (2007–2010), initiated under powers vested in the Office of the Chief Forester, an independent senior civil servant who advises the Ministry of Forests and Range on forest management decisions. Its scope is limited to the legislation and land base under the Ministry’s jurisdiction and to the environmental and ecological aspects of the prevailing forest and range management framework; it has no mandate to address social and economic objectives for forest and range management ([BC Ministry of Forests and Range 2008](#)).

The FFEI is a three-phase undertaking: (1) assessing the available knowledge about climate change impacts and adaptation; (2) developing a knowledge base including options and recommendations; and (3) implementing climate change adaptation recommendations into existing forest resource management policy and legislation ([BC Ministry of Forests and Range 2008](#)).

The FFEI originated in 2005 at a stakeholder workshop sponsored by the Ministry of Forests and Range, where seventy-five participants from federal and provincial agencies, universities, First Nations, forest and range industries, environmental organizations, and consulting resource professionals met to identify knowledge requirements and discuss potential changes to enhance the capacity of forest management to respond to climate change ([British Columbia Ministry of Forests and Range 2006](#)). Attendees voiced strong support for reforming the province’s forest management regime to take account of climate change adaptation, with a view to promoting ecosystem resilience ([British Columbia Ministry of Forests and Range 2006](#)).

Phase two saw the Ministry establish the Future Forest Ecosystems Scientific Council in 2008 to guide the allocation of $5.5 million in grant monies to support research that aligns with the objectives of the FFEI. The Council, comprised of representatives drawn from the Ministry and academia, is responsible for allocating research funding to a wide variety of researchers.
The Ministry initially committed to integrating FFEI into its ‘core business’ by Spring 2010 (British Columbia Ministry of Forests and Range 2008, p. 4). Despite this goal, regulatory implementation has been slow. Indeed, the only regulatory change attributable to the FFEI to date are June 2010 amendments to the ‘Chief Forester’s Standards for Seed Use’ which liberalize the use of Western Larch seed in new areas impacted by climate change in order to increase species diversity and productivity impacts promulgated by order of the Chief Forester (Government of British Columbia 2010b).

Alaska Climate Change Strategy (ACCS)

Alaska has been a leader in climate change adaptation action due in large measure to the highly visible, localized impacts of climate change, particularly flooding and erosion, on many of its remote communities (Chapman 2010). Although historically Republican in its politics, the state’s extreme vulnerability to climate change has contributed to broad-based support for policy action. This support stands in stark contrast to the prevailing political skepticism about climate change on the American right. As Alaska Senator Lisa Murkowski has recently put it, Alaska is ‘ground zero for climate change’ (Press Office 2010). During her tenure as Governor, Sarah Palin’s concerns about the state’s vulnerability to climate change impacts were a key driver in the development of the Alaska Climate Change Strategy (ACCS).

The ACCS was launched in 2007, shortly after the publication of the Preliminary Report of the Alaska Climate Impact Assessment Commission. The Commission, created in 2006 via Legislative Resolve #49 of the 24th Legislature, was tasked with ‘assessing such effects under climate change, as would affect the citizens, resources, economy, and assets of the State of Alaska’ (Alaska Climate Impact Assessment Commission 2008, p. 1). The Commission, whose members included two state House members, two state Senators, and seven public members, held a series of public meetings across the state and reached the conclusion that ‘continued identification of potential challenges, threats, and responses was needed within the Administration’ (Alaska Climate Impact Assessment Commission 2008, p. 5).

Following legislative tabling of the Commission’s Preliminary Report, Governor Palin issued Administrative Order 238 (September 2007), establishing the Alaska Sub-Cabinet for Climate Change (State of Alaska 2007). The Climate Change Sub-Cabinet consists of the commissioners of seven senior government departments. Its chief purpose is to advise the Governor on the preparation and implementation of an Alaska climate change strategy (State of Alaska 2007). A further purpose is to ‘serve as the executive branch contact to, and a resource for, the Alaska Climate Impact Assessment Commission’ (State of Alaska 2007). In order to achieve the purposes set out in the Administrative Order, the Climate Change Sub-Cabinet was empowered to form workgroups.

To this end, mitigation and adaptation advisory and supporting technical groups were convened. The Adaptation Advisory Group (AAG) was particularly polycentric with representatives appointed from 28 organizations, including government, municipalities, academia, tribal groups, and ENGOs. The AAG was tasked to review existing and planned state actions, identify potential options for design and priorities for analysis, and recommend actions to achieve the Administrative Order’s ‘Purposes and Duties’. Its approach to addressing forest adaptation to climate change is nested within a much larger statewide adaptation strategy.

Four supporting and facilitated technical groups – public infrastructure, health and culture, natural systems, and economic activities – were established, composed of experts...
in their respective fields. These groups were assigned to review the existing vulnerabilities, impacts, and opportunities; analyse, review and rank options; and develop proposals for activities and policies. With respect to forestry and climate change adaptation, the AAG’s broad recommendations were twofold: (1) to review and modify Alaska’s wildland fire policy and programs; and (2) to reduce the introduction and spread of invasive species and eruptive species in the context of climate change (Alaska Department of Environmental Conservation 2010).

The ACCS’s narrow focus on wildfire management and invasive species as its primary recommendations reflects a policy choice to address the most immediate climate change impacts, rather than grapple with more long term ‘science-centric’ adaptation as was done in the FFEI. Whether and how these long-term issues will be addressed remains to be seen. Indeed, there is some question about whether and to what extent the ACCS’s two main recommendations will be acted upon. In this regard, the ACCS recommended statutory amendments to create stakeholder advisory committees (for example, an Invasive Species Council) and the development of climate change responsive programs and plans (for example, Community Wildfire Protection Plans). However, nearly two years after these recommendations, there has been little or no implementation (Chapman 2010).

PART III: ANALYSIS
Institutional dimension
In the institutional dimension (see figure 1), we assess the formality of the institutions implicated in the governance arrangement (the vertical axis) against the monocentric/polycentricity of the arrangement (horizontal axis). Placement along the horizontal axis reflects the quantity and diversity of actors engaged in the institution architecture of the arrangement (as per the framework outlined by Tollefson et al., 2012). Placement along the vertical axis is a function of the institutional formality of the arrangement as measured by the extent to which the operations of the relevant institutions have clearly prescribed legal foundations and mandates and well established rule-based approaches.

![FIGURE 1 The institutional dimension](image-url)
to decision-making and policy implementation, or, alternatively are less formal, more experimental and cross multiple jurisdictions and levels.

What is immediately noticeable about the placement of the four case studies along the horizontal axis is how they range broadly across the continuum. At the two ends of this axis are our two adaptation cases: FFEI and ACCS. This reflects a clear distinction in the approach adopted by the governments of British Columbia and Alaska. The FFEI initiative (BC) was deliberately designed to harness the expertise of a relatively small range of stakeholders (government, academic, industry) to address, in a strategic and limited way, key adaptation issues of interest to its departmental host, the Ministry of Forests and Range. In contrast, partly due to the fact that forest adaptation has been bundled into a much broader climate change initiative, efforts in Alaska under the ACCS present as a very broad-based, almost classically polycentric arrangement.

Institutional arrangements in our mitigation cases cluster closer to thecentre of the monocentric-polycentric continuum. A feature of the NZ ETS is that it involves multiple institutions over time. While it was centrally led during both Labour and National Party governments, a concerted attempt was made under Labour to secure public participation and input via the Citizens Forum. When the new government took office, these outreach efforts were abandoned. In its place, the National Party government established a more expert-based model that gave a broad (though arguably quite politically constrained) mandate to the ETS Review Committee. Given the foregoing, we consider the NZ ETS to be less polycentric than the FCSC. The placement of the FCSC reflects the relatively broad range of interests – producers, users, ENGO and indigenous representatives – that were afforded (at least in principle) the opportunity to participate in its work. The FCSC model also afforded an observer role for government officials.

The relative formality of the various institutions that comprise the governance arrangements in our cases are plotted on the vertical axis. Rating highest in terms of institutional formality are the FCSC and ACCS cases. Less formal is the NZ ETS, and the least formalized is the FFEI. While the FCSC was a non-government led initiative, it nonetheless exhibited high levels of institutional formality, both overall and in terms of its component elements. Despite its non-state/voluntarist genesis and nature, it nonetheless operated in a highly prescribed and largely transparent manner, in part out of a desire to comply with ANSI-approved standard setting requirements. As such, its mandates and procedures were clearly described, and voting and representation rules were carefully crafted. Mitigating against a higher formality ranking were its voluntarist character, and the fact that it employed informal negotiations as opposed to an adjudicative model to resolve internal disputes.

Even more formal on this institutional metric is the Alaska case. This is a function of its hard law mandate, which emanated from the office of the Governor under an executive order. This executive order created and mandated the various institutions involved in this case including the Climate Change Sub-Cabinet, the Adaptation Advisory Group, the Immediate Action Group, the Research Needs Group, and the Natural Systems Technical Group. This executive order will determine what future action, if any, is taken based on recommendations emerging from the ACCS.

Assessing the institutional formality of the NZ ETS case on the vertical axis is somewhat challenging. This is in part attributable, as described above, to the fact that this case involves two quite distinct institutions over time (the Citizens Forum and later the ETS Review Committee). This is compounded by whether to consider the executive and legislative institutions that played a central role to be features of the institutional
arrangement. In the end, we have chosen to include them in our formality assessment. Regardless, however, their impact is likely somewhat of a neutral factor in that while they exercised formal (and, to some extent, judicially reviewable) powers and functions that are legally and constitutionally-defined, they did so in a fashion dictated by ad hoc political considerations rather than on a more formalized, principled basis.

The FFEI is the least formal of the institutional arrangements in our study. As an ad hoc initiative of the Ministry of Forest and Range the FFEI has no formal legal mandate or legal existence, unlike its Alaskan counterpart. Overall, apart from the fact that it was created in response to an official request from the Chief Forester and that its operations are supported by a formally constituted research funding council, it has few hallmarks of institutional formality. In addition, it has operated on a relatively informal work-plan, which is flexible and iterative both in terms of timelines and outcomes.

Political dimension

In the political dimension (see figure 2), we identify the locus of political power and influence of the players implicated in the governance arrangement (the vertical axis) against the monocentricity/polycentricity of the arrangement (horizontal axis). Placement along the horizontal axis reflects the quantity and diversity of actors that plausibly exercise political power or influence within the arrangement as per Tollefson et al.’s overview article. Placement along the vertical axis reflects whether the locus of power and influence resides more with state or non-state actors.

An initial observation about our placements along the horizontal axis is that in all cases except FFEI, they remain in the same plane as they were positioned in the institutional dimension. This reflects, generally, our assessment that in terms of the political power and influence, the institutional architectures in our cases correspond closely (in terms of number and diversity of actors) with the landscape of political power. The exception here, in our view, is that the FFEI’s institutional architecture tends to be less ‘representative’ of industry interests than a power/influence mapping of Ministry operations would tend to suggest (Hoberg 2010). It must be borne in mind that the horizontal axis we have

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**FIGURE 2** The political dimension
been asked to employ for symposium purposes is a relatively coarse filter; assessing the number and diversity of actors with a plausible claim to power or influence over the outcome(s) at stake in the governance arrangement but not weighing their relative power or influence.

The task of evaluating relative power or influence falls to the vertical axis. Here we are asked to assess whether, in the aggregate, within a particular governance arrangement the balance of political power and influence tilts towards the state or non-state actors. One critique of this approach, noted in the overview to this symposium, is that it adopts a binary approach to analysing power relations (see symposium overview article, above). We would agree with the authors of the overview piece that, in some contexts, it can be problematic to combine power and influence into a single metric. This, in our view, is especially true in cases where government has the ultimate power to render the final decision and yet it does so, as in the NZ ETS case, while heavily constrained by the influence of business interests.

Nonetheless some determinations along the vertical axis are relatively straightforward. For example, power within the FCSC process itself resides almost entirely beyond the state. It does so to an extent not seen in our other cases. This is a deliberate feature of the governance arrangement. Nonetheless, it would be a mistake to assume that government influence extended no further than its sole government participant. Given the aspiration of the FCSC to have its standard adopted as state-recognized hard law (now, in abeyance), clearly the FCSC was mindful of the need to craft a standard capable of governmental buy-in, both in terms of substance and process.

Non-state actors, particularly industry, agriculture and forest landowner interests, played an influential role in the ultimate outcome in the NZ ETS case. As discussed, these interests exercised a strong influence over key decisions made at a variety of junctures. As such, although ultimately the power to make decisions with respect to the ETS rested with the state (via a closely contested Parliamentary vote), the influential role played by key economic interests justifies a vertical plotting very close to the mid-point of the axis.

Power and influence in the FFEI governance arrangement is more difficult to assess. As with most policymaking initiatives in this sector, there is strong congruence of interest between government (who, as landlord, is highly dependent on resource rents) and the forest industry tenants. This suggests that the default assumption should be a plotting close to the midpoint on the vertical axis. What tilts our assessment slightly to the state side of this continuum is that this initiative appears to be designed to focus less on forest economics and more on forest health-related issues, a feature reflected in the relatively low level of direct industry participation in FFEI and a correspondingly high level of participation by government-funded scientists (working within government, the private sector and academia). As such, and bearing in mind the potential for science developed outside of the state (albeit with state funding) to drive the ultimate outcomes, we place the FFEI just above the midpoint of the vertical axis.

The Alaska ACCS is a more formal, broader initiative than its BC counterpart, engaging an impressive range of actors both from within and beyond government, along with a well-established epistemic community around climate issues. Insofar as the ACCS is making recommendations back to the state governor, it is clear that at least formally the power to decide what actions ensue rests with senior bureaucrats and elected officials to whom they report. Given the nascent nature of the ACCS, it is difficult to assess what economic sectors or actors are likely to exercise influence over the ultimate fate of this venture. Contributing to this uncertainty is that (unlike the FFEI) the mandate of the
ACCS embraces a range of climate change-related issues extending well beyond forest adaptation. This creates the potential that the fate of ACCS’s ultimate ability to generate and manage reforms on the forest adaptation front will be intertwined in complex and unpredictable ways with the fate of its work on other aspects of its mandate. At this juncture, we conclude that its position on the vertical axis broadly aligns with that of the FFEI.

**Regulatory dimension**

In the regulatory dimension (see figure 3), we assess whether the outputs of the governance arrangement more closely resemble hard or soft law (the vertical axis) against the monocentricity/polycentricity of these same outputs (horizontal axis). Employing the symposium framework, placements along the vertical axis reflect three metrics: *precision* (how closely does the output prescribe and constrain private action?); *obligation* (how legally binding are the obligations embedded in the output?); and *delegation* (to what extent is adjudication and enforcement of these obligations vested in an independent third party?) (Abbott and Snidal 2000). Placement along the horizontal axis reflects the quantity and range of actors engaged or entitled to be engaged in the regulatory regime contemplated by the governance arrangement as per Tollefson et al.’s overview article, above. A monocentric governance arrangement in the regulatory dimension will typically involve a bilateral, often ‘contractual’ relationship between the regulator and the regulated (that is, a discrete pollution permit) issued pursuant to a relatively opaque process with little or no opportunity for public notice or comment. A polycentric governance arrangement, in contrast, is one in which both issuance and terms of permit and other entitlements are subject to clearly enunciated legal principles and requirements that afford more robust opportunities for public participation and judicial oversight.

In adopting the view that the space between soft and hard law can be seen as a continuum that varies along these three metrics, we recognize that this typology (originating in the work of Abbott and Snidal 2000) departs from a more traditionalist approach which views the hard law-soft law distinction in more binary terms, as turning on whether
the obligation in question can be judicially enforced (Shaffer and Pollack 2010). For the purposes of this article, we prefer the continuum approach as it offers latitude for assessing varying legal instruments (including those that emerge beyond the state) in terms of the embedded actor ‘design choices’ they reflect (Shaffer and Pollack 2010).

An initial question is where our cases should be plotted on the horizontal axis. At this juncture, two of our cases have yet to produce regulatory results, making plotting along this axis more difficult. In the absence of firm regulatory results in these two case studies, we have plotted them on the horizontal axis assuming that the level and diversity of engagement in the institutions will be reflected in the regulatory results. Where we have evidence to the contrary, we have, of course, reflected this shift.

One of the more interesting cases in the regulatory dimension is the FCSC standard. At the outset, its goal was to develop a soft law standard that could readily be incorporated into then-emerging hard law carbon trading systems being developed in the US and Canada. Earlier, we discussed the highly formal ANSI-compliant institutional architecture from which the standard was to be generated. The content of the standard was likewise designed to be ANSI-compliant. To this end, in terms of the precision metric, the draft FCSC standard adopted a performance-based approach, which prescribed required outcomes. Like other forest certification standards and hard law forest practice regulations, it allowed for on-the-ground flexibility with respect to how these outcomes were to be achieved. The legal enforceability of such requirements is an open question; with considerable faith being placed in the notion that reporting and transparency obligations will generate desired levels of compliance. In short, while formally soft law, the draft FCSC standard can be seen as an attempt to emulate analogous hard(er) law attributes and processes with a view to positioning the standard so that it could plausibly claim social licence and be readily adopted or incorporated into state hard law. In light of the foregoing, we have positioned the FCSC immediately below the mid-point of the vertical axis.

The NZ ETS provides an interesting counterpoint to the FCSC standard. The ETS is undoubtedly hard law in the traditional sense, yet in key respects it is open to the critique that its provisions are somewhat softer than this overall characterization might imply. Furthermore, a broad range of monitoring, compliance and enforcement functions rest squarely in-house with the Ministry of Economic Development (NZ Ministry of Economic Development 2010). While commentators do not anticipate that the mainly large scale firms now participating in the ETS will have strong incentives to ‘game’ the system, the ‘in-house’, non-delegated approach to monitoring, compliance and enforcement affects its placement on the vertical axis. As such, while the NZ ETS is formally a hard law instrument, the obligations it creates and the manner in which they are enforced point somewhat toward the soft law side. As such, we would position the ETS just above the mid-point of the vertical axis.

The ultimate characterization of FFEI and the ACCS in terms of the regulatory dimension is a somewhat more speculative exercise. The mandate of the FFEI anticipates generating both hard law and soft law reforms to BC’s existing forest management system. To date, the only formally announced change has been an amendment to the Chief Forester’s standards for seed use, which will allow for the planting of seed species across a broader range based on changing climatic suitability assessments. This amendment took the form of a hard law ‘directive’ promulgated under the powers of the Chief Forester. This is a small step, and undoubtedly further regulatory changes will follow; some of a hard law complexion and others of a softer variety. Whether the future changes will take the form of amendments that supplement or modify existing legislation and policy, or whether,
ultimately, adaptation will serve as a driver for a more comprehensive transformation of
the existing BC forest management regime remains to be seen. The future of the ACCS in
the regulatory dimensions is even more difficult to predict. The mandate of the ACCS is
broader, which might militate in favour of a more robust and ambitious transformation
of Alaskan forest management. However, the work of the ACCS is still at a preliminary
stage and, as yet, no regulatory changes have emerged from its work. For this reason, we
position both the ACCS and the FFEI close to the mid-point of the vertical axis pending
further developments.

PART IV: CONCLUSION
All of our case studies profile initiatives designed to respond to climate change, exploring
the role that forests can play in dealing with this ‘wicked problem’ (Lazarus 2009). Clearly some of the differences between our cases reflect underlying differences between
mitigation and adaptation as policy arenas with inherently distinct dynamics (Hof et al.
2010). Mitigation has received a higher profile in most of the jurisdictions involved in our
cases, and the specific policy fixes required for mitigation are better understood than for
adaptation (Biermann et al. 2010). This trend may reflect the notion that while adaptation
can reduce climate change-induced damage in the short term, it is not effective alone in
the long term because it does not reduce climate change itself (Hof et al. 2010). Mitigation,
on the other hand, is effective at reducing climate change impacts in the long term; however, understanding the distribution of costs and benefits, risks and uncertainties
of implementing specific mitigation measures is very complex, and the economic stakes
tend to be high (Hof et al. 2010). Adaptation as a policy realm remains underdeveloped
(Hof et al. 2010), and as a political issue, it typically lacks public profile except following
extreme events such as major forest fires, or infestations that are linked to climate change.
Among other things, these differences may help to explain the politicized nature of
our mitigation cases, and the relatively nascent state of the adaptation-focused ‘new’
governance arrangements we have identified and profiled.

To further explore the observed differences between the cases, we now return to the
three questions set out in Tollefson et al.’s overview article to this symposium, above.
The first question, concerning governance shifts, requires close attention to three critical
dimensions of what are presented as putatively new governance arrangements. In so
doing, the posited hypothesis was that new governance arrangements would tend to
inhabit the lower right quadrant across all three of our governance ‘dimensions’; in other
words, to embody informal institutions, reflect a balance of power that favours non-state
actors, and deploy primarily soft law forms of regulation. This clustering of putatively
new governance characteristics would seem particularly likely to emerge in the policy
domains of climate change mitigation and adaptation, given the highly novel and wicked
challenges they present.

Despite this, the evidence emerging from our analysis supports the conclusions of
Howlett et al. (2009): namely, that new governance arrangements tend to be much more
diverse, unpredictable and plain ‘messy’ than a simple ‘government to governance’ thesis
would suggest. None of our four cases consistently plot onto the lower right quadrant.
Indeed, two of our cases (FFEI and NZ ETS) tend to exhibit the opposite tendency,
reflecting moderate levels of institutional formality and state power that correlate to a
relatively traditional monocentric model of participation across the horizontal axis. Even
those cases that embody a more polycentric governance approach to participation (FCSC
and ACCS) do little to bolster the government to governance thesis. In the FCSC case, arguably our purest new governance exemplar, the level of institutional formality is striking, as is its emulation of state ‘hard law’ norms and practices. Institutional formality is also a core feature of the ACCS model. Where our data is more limited is on the regulatory dimension. Here too, however, there is little evidence of any generalized tendency towards soft law solutions.

The second symposium question, concerning institutional dynamics, is more difficult to assess. In some of our cases, particularly those that exhibit high levels of formality, institutional arrangements do appear to determine or constrain the outcomes in other dimensions. For example, the formal ‘polycentric institutionalism’ of the FCSC both largely determined the balance of political power within the initiative, and the ultimate nature of the draft carbon standard. Its institutional arrangements also played a significant role in the outcome of the ratification vote on the draft standard and the subsequent decision to postpone further standard development work (FCSC 2011). Likewise, the institutionally constrained nature of the FFEI has to date tended to reinforce existing relations of political power, and circumscribe the range of regulatory outcomes. In other settings, however, institutional arrangements have exerted considerably less influence. For example, the institutional vehicles deployed by the NZ governments to consult and secure advice with respect to the development of the ETS played a marginal role in determining the ultimate outcome of the process; much more decisive were underlying relations of political power.

The final symposium question requires consideration of the relationship between the emerging governance arrangements in our cases and extant governance regimes. The fledgling nature of climate change mitigation and adaptation as policy domains would, on its face, set the stage for a variety of modes of engagement with extant forest management regimes. As described in the overview article to this symposium, Trubek and Trubek contend that we would expect to see three distinct patterns of engagement: rivalry, complementarity or transformation (Trubek and Trubek 2006, p. 543). Our analysis confirms the heuristic value of the Trubek approach in exploring the interplay between new and old governance arrangements.

Of our four cases, the FFEI consistently rates low in terms of new governance attributes across all three of our governance dimensions. There is little here to suggest that, in this setting, a parallel climate change-driven system of governance will soon emerge. As such, at least at this juncture, it would appear that the FFEI may be the ‘outlier’ case in our study; arguably reflecting the reality that the FFEI, in its current form (at least in the Trubeck’s conception) is not a new governance arrangement at all. The Alaska case remains somewhat inscrutable. On the surface, it exhibits several key new governance features, including a highly polycentric approach to its deliberations, and a broad, flexible and integrated mandate. It is also an initiative which has been formally constituted and in which leading state officials have invested political capital. At this nascent stage, however, it remains unclear whether – in terms of adaptation – Alaska will follow the path of incremental reform taken by its southern neighbour or, alternatively, whether its adaptation-related policy efforts will be integrated into a more comprehensive climate governance arrangement.

The two mitigation cases are suggestive of varying degrees of what might be considered systemic rivalry. Perhaps the more obvious example is the FCSC. This initiative was a deliberate effort by North American forest industry interests to offer a competitive alternative to a growing cohort of state and non-state sponsored carbon offset and accounting standards. To maximize the potential for rapid adoption, it strategically
sought to address accreditation and social licence concerns through a highly formalized standard development process. Where this rivalrous relationship would have evolved, had state-led progress towards hard law cap and trade systems continued, is uncertain. One possibility would have been complementarity: a negotiated relationship with competing standards that may have ultimately morphed into ‘mutual recognition’ of the type that is now widespread in forest products certification (Cashore et al. 2004; Tollefson et al. 2008). Yet for its FCSC proponents, what the Trubeks would term ‘transformation’, the merger of key elements of FCSC regime into hard law, was the ultimate goal. In the meantime, both state and industry-sponsored efforts on this front are largely in abeyance. Rivalry would also seem to play a key explanatory role in the NZ ETS. Here, the rivalry pits the existing regime of legal rights enjoyed by key industry players against proponents of an ecologically robust emissions liability and trading regime. The outcome of this clash, the heavily brokered and constrained reform initiative chronicled and described above, underscores the legal and political inertia that will likely confront other national governments that may be tempted to follow in New Zealand’s footsteps.

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