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Seeing the Global Forest for the Trees: How US Federalism can Coexist with Global Governance of Forests

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ABSTRACT *Both international forest and climate negotiations have failed to produce a legally binding treaty that addresses forest management activities—either comprehensively or more narrowly through carbon capture—due, in part, to lack of US leadership. Though US cooperation is crucial for facilitating both forest and climate negotiations, the role of federalism in constraining these trends has been given scant attention. We argue that, as embodied in the US Constitution, federalism complicates the US's role in creating any legally binding treaty that directly regulates land uses (e.g. forest management). Because federalism reserves primary land use regulatory authority for state governments, voluntary, market-based mechanisms, like REDD and forest certification, should be included within any binding treaty aimed at forest management, in order to facilitate US participation.*

Since the late 1980s, countries promoting formal global action on forest management practices have been disappointed, as attempts to forge a legally binding international forest treaty have met great difficulty. As Dimitrov *et al.* (2006) describe, numerous international fora have considered the creation of such a treaty: the 1992 UN Conference on the Environment and Development (UNCED); four sessions of the Intergovernmental Panel on Forests between 1995 and 1997; four rounds of the Intergovernmental Forum on Forests between 1997 and 2000; and sessions of the United Nations Forum on Forests (UNFF) in the 2000s (also see Gueneau & Tozzi, 2008).¹ These efforts have been described as ‘a resounding failure’ (Dimitrov, 2003, p. 134).² The causes of their failure are varied. At UNCED conflicts erupted over trade issues between developed and developing countries, stifling agreement on a ‘new legal instrument on forests’ (Dimitrov, 2003, p. 135). Both at UNCED and subsequent forest conferences, progress has been stymied by developing countries concerned that a binding treaty would negatively affect developing economies by regulating tropical forests more stringently than the temperate and boreal forests of the developed world (Dimitrov, 2003). As the use of market-based mechanisms to address global forest issues has become more popular, this concern has

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morphed into a fear of 'forest colonialism', whereby the developed world would pay for the right to continue emitting carbon into the atmosphere while at the same time limiting development of forested lands in the developing world (Griffiths, 2007). Perhaps the most significant impediment to treaty formation, however, has been the US's inability to consistently support a legally binding international forest management agreement (Davenport, 2005; Dimitrov, 2005).³

Nevertheless, national governments have continued to discuss mechanisms for achieving global forest management. The UNFF, which concluded its 8th session in May 2009, remains the primary forum for what may be termed 'stand-alone' forest negotiations, which aim to promote sustainable forestry, preserve the varied ecosystem services provided by forests and address climate change. The role of carbon in forest management is also a focal point of the post-Kyoto climate negotiations, as national governments are increasingly seeking creative solutions, both regulatory and market-based, to address climate change. The US Congress, for instance, has considered numerous bills (e.g. Lieberman-Warner Climate Security Act of 2007, Dingell-Boucher Draft Legislation of 2008, American Clean Energy and Security Act of 2009 [Waxman-Markey Bill]) seeking to implement a carbon cap-and-trade scheme for regulating industrial carbon outputs. Because forest carbon sequestration capability provides a potentially significant solution to the climate change problem, there is movement toward including global forest management within climate change discussions, such as the upcoming UN Climate Change Conference number fifteen (COP-15), and rolling forest management into a post-Kyoto climate framework (Karsenty *et al.*, 2008; Johns *et al.*, 2008; Angelsen, 2008; Levin *et al.*, 2008).⁴

Will a legally binding stand-alone forest treaty emerge from future UNFF negotiations? Will a post-Kyoto climate treaty provide a significant role for the management of forests as carbon sinks, in both the developed and the developing world? What mechanisms might such treaties employ to address forest management, and what requirements might they place upon participating countries?

These questions are particularly important to the US—viewed as crucial to the success of both climate and international forest negotiations (Davenport, 2005)—because the US's own domestic governance structure complicates its role in the creation of any legally binding treaty that involves the potential direct regulation of land use by the federal government. The US's governmental system of federalism, engrained in the US Constitution⁵ and receiving staunch protection by the US judiciary (Watts, 1987), causes domestic implementation of certain international forest governance scenarios to be more viable than others. We argue that implementation and promotion of voluntary, market-based forest programmes would allow the US to agree to, and implement, a binding treaty that includes forest management, as the federal government would not then engage in the direct, prescriptive regulation of private lands—a role reserved primarily for state governments under the US federal system.⁶ Such programmes could help avoid failure of treaty implementation in the US caused by *ex post facto* judicial challenges to the domestic validity of the treaty.

While scholarly works have focused on decentralized mechanisms for international forest governance, domestic institutional structures like federalism have largely been absent from the debate on international forest management regime formation.⁷ This is an important gap, especially when Glück *et al.* (2009) argue that a forest regime should provide mechanisms that allow the greatest degree of flexibility in managing forests in order to achieve desired results on the ground—that is, a 'bottom-up' approach. They contend that forest governance—given increasing international negotiations on forests—should retreat

from prescriptive approaches, or 'traditional governance', and should instead focus on results-based approaches, precisely because 'traditional governance, focusing on a hierarchical, top-down style of policy formulation and implementation of the nation state and the use of regulatory policy instruments, will be incompatible with this demand for flexibility' (Glück *et al.*, 2009, p. 4).⁸

Though there is a well-studied 'outside-in' limitation on traditional governance (with 'outside' international negotiations impacting internal domestic regulatory forest policy), there exists a little discussed 'inside-out' limitation as well, as domestic governance structures, such as US federalism, also place limits on traditional forest governance at the national and international levels.⁹ Analysis of such inside-out limitations is critical given that the US, as one of the key participants needed to successfully implement an effective treaty, is governed by a constitutionally entrenched federal system. Because the US federal system divulges primary private land use regulatory authority from the federal government and places it within the hands of state governments, we argue that voluntary, non-prescriptive market-based mechanisms, like forest certification, ecosystem service transaction programmes, and reduction of emissions from deforestation and degradation (REDD) programmes, embody the types of voluntary mechanisms that are preconditions for allowing US participation in any legally binding treaty that includes global forest management.¹⁰ Global forest governance has experienced a *general* 'downward shift from national to sub-national levels', or, decentralization (Glück *et al.*, 2005, p. 55), which has facilitated the use of such non-prescriptive mechanisms. US federalism, however, represents a *specific* legal constitutional requirement for decentralization, whereby a national government is judicially required to divulge regulatory authority to sub-national units (the states) in the area of direct forest management.¹¹ This, in turn, limits the types of international treaties that may be implemented relating to forests, at least as applied to the US.

Going forward, we contend that the US would likely be more inclined to take a leadership role in the area of binding global forest governance if it does not perceive domestic legal limitations on its ability to implement a treaty aimed at forests. We develop this argument through a legal analysis, complete with an assessment of the resulting policy effects, to demonstrate how US federalism might best coexist with global governance of forests. Part II describes the role of the US in influencing and shaping international forest discussions and explains how its domestic system of federalism affects that role. Part III examines the case of *Missouri v. Holland*, which supports the legal argument that the US federal government may not directly regulate certain private land uses, such as forest management, despite entering into a binding international treaty for the protection of natural resources. Finally, Part IV concludes with a discussion summarizing why market-based, voluntary mechanisms could pave the way for the US to support, and agree to, global treaties aimed at forest management.

The US—A Federalist Veto Player?

The primary forum facilitating debate on global governance of forests is the UNFF. It has sought to promote sustainable forestry, address climate change, and preserve the varied ecosystem services provided by forests. International negotiations leading up to the current UNFF talks, however, have failed to achieve binding global forest governance.¹² Additionally, the UNFCCC is increasingly considering forest management in the context of climate change, with current emphasis on the development of REDD programmes that

have the potential to improve carbon credit and offset markets globally.¹³ UNFCCC negotiations, however, have failed to establish, in a binding instrument, a significant role for forests in mitigating atmospheric carbon.¹⁴

Regardless of the forum in which binding global forest management may eventually manifest, the participation of the US is crucial. Without uncompromised US participation, a future climate treaty, like Kyoto before it, is unlikely to materialize in a form that adequately addresses forest degradation and/or global carbon emissions in the most comprehensive and effective manner. Given that the US is one of the greatest emitters of industrial carbon emissions in the world (highest per capita), and that it is already considering regulation of industrial carbon domestically, bolstering the carbon market by including forests may result in reduced US opposition to a post-Kyoto international climate treaty. The US has long sought flexibility mechanisms, such as carbon offsets, to reduce the economic strain of potential international carbon regulation,¹⁵ and has included such mechanisms in various iterations of its own domestic legislative carbon proposals. Forests provide such flexibility and may be seen by the US as a key component to its cooperation on carbon in the international arena.¹⁶

The US's support and leadership is also recognized as a necessary part of any stand-alone treaty that seeks to capture both carbon and non-carbon related values of sustainable forest management (see Davenport, 2005). Yet, recently the US has forged a 'powerful veto coalition in opposition to any further internationally binding instrument' on forest management (Scholz, 2004, p. 9). Past US opposition to a forest treaty is not attributable to concerns over federalism, as it appears that federalism has yet to be raised as a potential impediment to domestic forest treaty implementation.¹⁷ Rather, US opposition has arisen out of a domestic political shift prioritizing national sovereignty in the forest sector over binding international harmonization of forest practices (Scholz, 2004).

Though policy-driven domestic *political* issues hamstrung US negotiators in both previous forest management and climate talks,¹⁸ the domestic issues that could potentially derail a future treaty including forest management are largely technical and have a *legal* basis. Future international efforts to secure and implement binding forest management practices may fail because highly controversial aspects of natural resource management in the US, grounded in American constitutional law, may hinder it from taking a leadership role. If the US takes note of an important potential domestic legal obstacle, largely ignored by scholarship, it may be less inclined to lead regarding global governance of forests. Namely, the US's constitutional system of federalism creates difficulties for Congress when attempting to implement binding land use regulations through the use of prescriptive 'traditional governance', driven by inflexible, hierarchical and top-down regulatory policies, even if mandated by Congress via international treaty.

For instance, prescriptive international forest management directives requiring the implementation of nation-wide mandates on public *and privately owned* lands would likely prohibit US participation in the treaty because its federal system divides land use regulatory powers between the federal and state governments.¹⁹ Whereas central governments own roughly 86% of the world's forests and wooded areas worldwide (Agrawal *et al.*, 2008), US state and federal governments only own 40% of US forestland, with the remaining 60% in private ownership. Furthermore, it is estimated that almost 89% of the timber harvested in the US comes from private lands (Yale, 2009).

In turn, private land use regulation is primarily reserved for state governments, to exercise as a 'police power' for protection of the 'general welfare'.²⁰ The entire suite of police

powers available to the states is not delegated to the federal government under the Constitution, and the Tenth Amendment of the Constitution reserves for the states all powers not so delegated. Scholars have noted that '[t]he weight of legal and political opinion holds that this allocation of power in [the US] leaves the states in charge of regulating how private land is used' (Nolan, 2008, p. 17), and that '[l]and use law has always been a creature of state and local law' (Hamilton, 2003, p. 335). Most importantly, the US Supreme Court has recognized 'the States' traditional and primary power over land . . . use' (*Solid Waste*, 2001, p. 174),²¹ and that 'regulation of land use is perhaps the quintessential state activity' (*FERC*, 1982, p. 767).

Of course, private land use activities remain subject to federal regulation passed pursuant to other sources of authority under the Constitution, such as the Commerce Clause or treaty-making power. In fact, a number of federal regulations have an *effect* on private landowner activities without violating the Tenth Amendment. Both the federal Endangered Species Act (ESA) and Clean Water Act (CWA), each passed by Congress pursuant to its Commerce Clause power, limit private property owners' land use rights to a degree. Specifically with regard to forests, the ESA affects landowner ability to undertake certain logging activities that might endanger or threaten species, and the CWA maintains requirements for 'nonpoint' sources of water pollution arising out of logging activities (Rasband, 2004). These effects on land use, however, are *tangential* to the primary purposes of these federal regulations, which are to protect endangered species and water quality—not to govern the details of how private forest resources are to be directly and generally managed. Rather, states are responsible for direct regulation of private forest management activities, by establishing stand density, reforestation and riparian buffer zone requirements, governing clear-cutting practices, and implementing a wide variety of other best management practices (Laitos *et al.*, 2006, p. 849).²²

It is true that federal statutes can influence state regulation of forest management, as states may pass or modify state laws, such as riparian buffer zone regulations, for the purpose of meeting federal clean water or endangered species requirements. Nonetheless, analysis of both US judicial precedent and traditional accepted forest management practices helps distinguish the *permissible* influencing effects of federal statutes on state regulation from *impermissible* federal intrusion upon primary state regulatory authority over forest management. Courts have recognized the constitutional validity of both the ESA and the CWA under the Commerce Clause, despite certain limitations placed by those statutes on private land use.²³ Private forest management has never undergone such judicial scrutiny, as the federal government has never attempted to directly regulate private forest management activities by federal act, and courts have consistently recognized, as noted above, the 'quintessential' authority of states to regulate land uses, like forest management. Thus, Commerce Clause jurisprudence has yet to extend to private forests in a way that would conflict with the accepted practice of direct state regulation of private forest activities.²⁴

Private land use activities may also be affected when the federal government enters into an international treaty regulating certain natural resources—a principle governed to this day by the 1920 US Supreme Court case of *Missouri v. Holland* (*Missouri*, 1920). As noted below, however, *Missouri* may be distinguished on its facts, as the treaty in that case, much like the ESA and CWA, regulates resources tangentially related to the direct land use activities of private property owners, and the federal government has never asserted, by treaty, authority over specific private forest management activities traditionally regulated by

states. In short, though federal statutes and treaties may have an effect on the land use activities of private landowners, the federal government has never before claimed, nor been judicially conferred the authority to directly manage private forest management activities.

Due to US federalism, the types of forest directives that might arise out of either a post-Kyoto climate framework or a stand-alone forest treaty will necessarily affect the viability of the treaty within the US and will thus have an effect on treaty formation in the first instance, given the important role of the US. Scholars have noted that international efforts to regulate forest management activities by way of a global treaty would 'mandate some degree of harmonization of forestry practices' (Lipschutz, 2001, p. 159). A binding treaty, providing prescriptive forest management directives at the national level, however, would undoubtedly involve regulation of private US forests. The Intergovernmental Panel on Climate Change (IPCC) has cited several desired forest management results that could theoretically be achieved through a prescriptive, 'traditional governance' framework.²⁵ These results include 'increasing and maintaining forest area' and 'increasing and maintaining site-level carbon density' (Nabuurs *et al.*, 2007). Though it is true that these results can be accomplished by voluntary, market-based programmes, the IPCC leaves open the mechanism by which they might be achieved. Thus, it is feasible that binding forest management practices could require signatory nations to 'increase and maintain forest area' by prescribing, for example, maintenance of partial forest cover on all forested lands, implementation of soil erosion reduction programmes, or limitation of fertilizer use.²⁶

A likely response to such a treaty would be a flood of litigation and constitutional challenges in the US, with both private forest owners and states resisting the federally forced management of their lands.²⁷ The federal government, due to judicial complications, would be unable to effectively implement throughout most of the US any international forest agreement that prescribed forest management practices on private forest lands, hamstringing the US's ability to meet its treaty obligations. Furthermore, federalism may provide the US with a veto player incentive during negotiations on any treaty seeking to establish legally binding forest management directives, whether it be within a post-Kyoto framework or a stand-alone forest regime. Ultimately, federalism acts as an 'inside-out' domestic constraint on prescriptive 'traditional governance' at both the national and international levels, just as do 'outside-in' international negotiations in Glück *et al.* (2009).

If, as we suggest, however, negotiations aimed at forest management focus on voluntary, market-based mechanisms, then these judicial and domestic treaty implementation complications disappear. Private forest landowners would not be forced by the federal government to manage forests in a particular fashion, thus freeing the federal government from federalism constraints as it implements the treaty. For example, under a climate treaty the domestic, mandatory regulation requirements—i.e. carbon emissions reductions—would fall on industry emitters, not private landowners. Furthermore, under either a climate treaty or a stand-alone forest treaty, private forest managers would be incentivized by the market, or by any state regulation of forest management driven by the market, to manage forests in a way compatible with the sustainability principles established by forest certification, REDD, ecosystem services, and similar programmes. Such programmes would lead to behavioural change in private forest management because as the markets become more robust, an increasing number of private forest owners would realize the economic benefits from participating in the market and managing forests sustainably.

Carbon credits, for example, provide a means by which private forest managers can increase profit margins. Such credits could be gained by increasing stand densities or developing more robust riparian buffer zones. In addition, foresters might receive payment from ecosystem service funds aimed at improving water quality or preventing run-off that would otherwise require the building of detention ponds in municipalities. Similarly, forest managers might receive payment for the provision of air quality services, as urban forest programmes seek to remove particulate matter from the air through forestry.²⁸ Finally, demand should increase for certified forest products originating from lands managed in a sustainable fashion. These economic incentives, and the markets providing them, are especially important as other private forest markets are shrinking—e.g., the US pulp and paper industry is rapidly moving overseas, and large paper companies are offloading landholdings in the US. Thus an improved carbon market providing credit for REDD-type programmes, forest ecosystem service markets based on watershed protection, air quality, biodiversity protection, and other services, and a more robust forest certification market could fill an increasing void in the portfolios of private forest managers in the US and at the same time induce behavioural change in forest management that will have a positive environmental impact.

Ultimately, US federalism acts as a legal constitutional driver for decentralization and the use of bottom-up mechanisms, such as markets that allow the participation of a wide range of public, private, international and local stakeholders. Because of the need to utilize forest management to fight climate change, and to capture the multiple other values provided by sustainable forestry, it is important that the current political power structure of the major global environmental players be taken into account when negotiating the shape of binding treaties aimed at forest management. The federalism question will need to be considered. Because failure to take into account the federalism question in the US might lead to negotiations supporting prescriptive dictates, which would leave the US unable to act, domestic institutional structures like federalism place important limitations on ‘traditional governance’. As such, we next analyze the legal basis supporting the claim that US federalism would likely not allow the federal government to implement mandatory dictates for US private forest owners, and which supports the inclusion of voluntary mechanisms within either binding stand-alone forest management or climate treaties.

A Legal Basis for US Federalism Concerns

The legal basis upon which the aforementioned federalism question rests is the US Supreme Court’s decision in the case of *Missouri v. Holland*. *Missouri* has been described as the ‘benchmark’ for the Treaty Clause authority of the federal government to regulate certain natural resources (Laitos *et al.*, 2006, pp. 1200–1201). The events giving rise to *Missouri* began when, on 8 December 1916, the US and Great Britain entered into a treaty recognizing that ‘many species of birds in their annual migrations traversed many parts of the United States and of Canada . . . were of great value as a source of food and in destroying insects injurious to vegetation, but were in danger of extermination through lack of adequate protection’ (*Missouri*, 1920, p. 431). The two countries agreed to pass domestic legislation to protect these animals. To that end, the US passed the Migratory Bird Treaty Act (MBTA) to prohibit the killing, capturing or selling of any migratory birds included in the terms of the treaty. The state of Missouri brought a claim to prevent a US game warden from enforcing the MBTA, arguing that the act was unconstitutional as an interference

with the rights reserved to the states under the Tenth Amendment. Missouri also supported its claim based upon the tradition of state control over wildlife. The federal government, on the other hand, argued the statute was valid under the treaty-making authority granted to it by the Constitution.

The Supreme Court began its analysis by noting that Article 2 of the Constitution expressly delegates authority to the national government to create treaties. Furthermore, Article 6 declares that treaties are made under the 'authority of the United States', and federal laws passed under the Constitution, such as the MBTA, are the supreme law of the land. The Court found that '[i]f the treaty is valid there can be no dispute about the validity of the [MBTA] under Article 1, Section 8, as a necessary and proper means to execute the powers of the Government' (*Missouri*, 1920, p. 432). The Court then found that the treaty did not contravene any specific portion of the Constitution, and thus was valid—*unless* the treaty was prohibited by the Tenth Amendment under the facts of the case.²⁹

Had the Court stopped its analysis at the 'treaty power' it would seem clear that the US federal government could enter into an international agreement imposing domestic restrictions on forest management practices on private lands. However, the Court's subsequent Tenth Amendment analysis, as applied to the specific facts of *Missouri*, argues against such a conclusion, especially considering that the resource in question is private forestlands.³⁰ For example, the Court noted that 'wild birds are not the possession of anyone . . . [t]he whole foundation of the State's rights is the presence within their jurisdiction of birds that yesterday had not arrived, tomorrow may be in another State and in a week a thousand miles away' (*Missouri*, 1920, p. 434). Thus, the *migratory nature* of the birds weakened the state's claim of sovereign authority over them, and because the MBTA involved an international resource that moved across international boundaries, Congress could enter into an international treaty to regulate the resource without violating the 'general terms of the Tenth Amendment' (*Missouri*, 1920, p. 434).

Accordingly, the Court's Tenth Amendment analysis is apparently limited to the specific fact pattern of *Missouri*, resting upon the Court's characterization of the birds as being wildlife of a transitory nature. Furthermore, there is no question that the federal government has historically regulated wildlife, so that *general* invocation of the Tenth Amendment by states could not overcome the federal government's treaty authority to regulate that particular resource.³¹ This is a very different scenario from private forest management, which, as discussed above, has traditionally been considered a 'land use' regulatory responsibility reserved to states. Forests are indeed 'in possession' of specific public and private landowners and are obviously not migratory. These facts would likely argue *against* the domestic validity of an international treaty regulating private forest management, and *for* the invocation of a Tenth Amendment power reserved to the states.

It should be noted that the *Missouri* Court further stated:

[h]ere a national interest of very nearly first magnitude is involved. It can be protected only by national action in concert with that of another power. The subject matter is only transitorily within the State and has no permanent habitat therein. But for the treaty and the statute there soon might be no birds for any powers to deal with. We see nothing in the Constitution that compels the Government to sit by while a food supply is cut off and the protectors of our forests and our crops are destroyed. It is not sufficient to rely upon the States. The reliance is in vain, and were it otherwise, the question is whether the United States is forbidden to act. (*Missouri*, 1920, p. 435)

It may very well not be ‘sufficient to rely upon the States’ to properly regulate forest management.³² Also, climate change is indeed a ‘national interest of very nearly the first magnitude’, which can only be addressed ‘by national action in concert with that of another power’.³³

As noted, however, the Tenth Amendment analysis of the Court, relying primarily on the migratory nature of the birds and the lack of ‘possession’ by any party, coupled with the history of state regulatory authority over land uses such as private forest management, would likely prohibit a *Missouri*-type ruling on challenges to an international forest management treaty. If, as we believe, private forest management remains a power reserved to the states under the Tenth Amendment, then the federal government would not be able to implement prescriptive, ‘traditional governance’ forest management directives on private lands pursuant to an international treaty. Any attempt to do so would result in Tenth Amendment judicial challenges, likely brought by both private landowners and state governments.

Conclusion

In order to most effectively address climate change and preserve the numerous other ecosystem services provided by sustainable forestry, global forest management should be consolidated into a more formalized agreement. Achieving such an agreement will depend in large part not only on whether the US is willing to lead the international community in crafting management practices, but also whether the US would even be able to implement any ensuing treaty given its federalist governance system. US federalism hinders its ability to enter into a legally binding international agreement that seeks to directly regulate private forest owners. The case of *Missouri v. Holland*, along with implications arising out of the history of private forest management regulation in the US, indicates that the US’s treaty-making authority is unlikely to trump states rights in the area of forest management.

To avoid a global forest treaty based upon ‘traditional governance’ and prescriptive mandates that run afoul of US federalism principles, market-based initiatives like REDD, forest certification, and ecosystem services transaction programmes would likely provide the best opportunity to achieve global forest management goals, and do so with the uncompromised leadership and participation of the US. Such mechanisms represent the increasingly utilized neo-liberal approach to environmental governance, which posits that objectives can be best achieved not through the state establishing targets and enforcing compliance, but rather through voluntary measures and market-based policies (Humphreys, 2008), and also support the trend toward decentralization and ‘bottom-up’ approaches to global forest management.

Ultimately, though international treaties might *require* the US to implement and create a market for these programmes, the private landowners participating within the programmes would do so on a *voluntary* basis. Simply, private landowners would be incentivized by forest certification, ecosystem services or REDD markets to manage forests sustainably, but would not be forced to do so by traditional prescriptive regulation. Thus, a federalism conflict between the federal and state governments would be avoided. Moreover, market-based forest programmes would provide additional benefits beyond addressing US federalism concerns. They might play a role in further persuading the US to support an international climate change and/or stand-alone forest treaty, as costs of climate change regulation could be greatly reduced by the incorporation of such programmes. In the end, failure to consider the effects of domestic legal limitations on a

crucial leader in the areas of both global forest management and climate change would continue the trend of leaving global forest management concerns, and the global solutions needed to address them, in the hands of diverse, uncoordinated national interests.

Notes

1. For a chronology of forest treaty discussions since 1992, see Davenport and Wood (2006).
2. Later rounds of the UNFF have at least shown increased attention to the issue of a binding treaty (see Davenport, 2007).
3. Also see Reiner (2001) and Scholz (2004).
4. The UN Department of Economic and Social Affairs has advocated that '[a]t Copenhagen in December 2009, it is crucial that countries agree to include reducing emissions from deforestation and forest degradation in a post-2012 climate regime' (UN-DESA No. 16).
5. Scholars have described the US Constitution as embodying 'a very limited concentration of powers in the nation's central institutions . . . the original allocation of jurisdiction to the national government was . . . modest with the unspecified, but apparently broad, residue being left with the states' (Watts, 1987, p. 769).
6. Other federal systems might also face issues of domestic implementation—e.g. Canada's constitution grants the provincial governments *exclusive* responsibility for forest management (Boyd, 2003).
7. In this article, we refer only to 'explicit', or formalized, regimes (Krasner, 1982).
8. Also, see generally, Glück *et al.* (2005).
9. See generally, Putnam (1988). Other scholars have noted the trend towards a bottom-up approach for forests (Agrawal *et al.*, 2008 and Glück *et al.*, 2005).
10. Though REDD programmes have heretofore been aimed at the developing world, REDD provides a model of the type of market-based mechanisms that could be implemented in the US in order to avoid federalism issues.
11. See discussion below, pp. 9–12.
12. The 2007 UNFF talks resulted in a non-legally binding statement of principles, meant to promote sustainable forest management worldwide by encouraging national action and international cooperation (UNFF, 2006–2007). Some scholars claim that the instrument 'looks unlikely to achieve any real consolidation of global forest governance' (Gueneau & Tozzi, 2008, p. 551). Also, see Kunzmann (2008).
13. Though the Kyoto Protocol introduced the Clean Development Mechanism (CDM) for carbon offset projects in developing countries, the CDM has proved inadequate, as only three forest CDMs exist (<http://www.carbonpositive.net/viewarticle.aspx?articleID=1463>).
14. For discussion of Kyoto's failure to adequately incorporate forest management, see Levin *et al.* (2008) and Cashore *et al.* (2006).
15. See Reiner (2001).
16. For discussion of the economic incentives provided by forests, see Davenport (2005, pp. 123–124). Also, note carbon credit projected price data at EIA (2009).
17. In our search of the literature, we found no such instances.
18. For more discussion see Reiner (2001), Davenport (2005), and Scholz (2004).
19. Though related more to political sovereignty than to concerns about federalism, the US's opposition to a forest convention in 1997 is partially explained by its 'fears about environmental requirements finding their way into the agreement' (Porter, 2000, p. 209).
20. See *Mugler* (1887).
21. Citing *Hess* (1944, p. 44): '[R]egulation of land use [is] a function traditionally performed by local governments'.
22. Furthermore, logging is only one activity potentially undertaken by forest owners. Non-industrial uses of private forests are even more clearly in the zone of power reserved to the states, which implement zoning and development laws. The federal government cannot establish zoning schemes for states or municipalities, and some municipalities use zoning as a means of regulating land use related to forestry (Laitos *et al.*, 2006, p. 871).
23. See generally, Goldstein & Thompson Jr. (2006, pp. 1086–1102) (ESA) and Rasband (2004, pp. 795–796 and pp. 822–823) (CWA).
24. Beyond the scope of this article is exploration of whether federal regulation of private forests could withstand judicial scrutiny under potentially expanded Commerce Clause jurisprudence.
25. Though climate negotiations are primarily concerned with forest carbon only, the IPCC's findings are relevant to future UNFF negotiations, as the UNFF has also recognized the role of forest carbon in addressing climate change.

26. For further explanation of how these results might be achieved, see Nabuurs *et al.* (2007, p. 551).
27. Claims might also be brought under the Takings Clause of the Fifth Amendment, granting protection for private property owners by establishing that property may not be taken by the government without 'just compensation'.
28. An example of a programme providing such services is an urban forestry project undertaken in Tucson, Arizona, where 500 000 mesquite trees have helped save the municipality thousands of dollars by reducing runoff, and are also expected to remove 6500 tons of particulate matter annually (Rasband, 2004, p. 1155).
29. The Court stated: 'The language of the Constitution as to the supremacy of treaties being general, the question before us is narrowed to an inquiry into the ground upon which the present supposed exception is placed' (*Missouri*, 1920, p. 432). The Court also stated: 'No doubt the great body of private relations usually fall within the control of the State, but a treaty may override its power . . . it only remains to consider the application of established rules to the present case' (*Missouri*, 1920, p. 434–435).
30. Importantly, the Court stated: 'We do not mean to imply that there are no qualifications to the treaty-making power; but they must be ascertained in a different way' (*Missouri*, 1920, p. 433). In addition, it is unclear that the Court today would even consider the facts of *Missouri* under the treaty-making power, as 'since 1937 the Supreme Court's broad reading of the Commerce Clause as a source of congressional power has led to more reliance upon it to uphold federal regulation of wildlife' (Coggins *et al.*, 2007, p. 178). In fact, the MBTA itself was subsequently justified independently under the Commerce Clause (e.g. see *Andrus v. Allard*, 1979).
31. In *Palila v. Hawaii Dep't of Land & Natural Resources*, the court characterized the holding in *Missouri* as the authority of 'the federal government to preempt state control over wildlife under federal legislation implementing a . . . [t]reaty' (*Palila*, 1979, p. 993).
32. Indeed, state governments are likely to exercise less stringent environmental controls over forest management activities on state owned and private forests, than is the federal government over federal forests. For discussion, see Koontz (2002).
33. This statement arguably does not apply, however, regarding forest management in isolation from the climate issue. It seems clear that the US could responsibly and sustainably manage its forests without reliance on the cooperation of any other nation.

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