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Dynamic Forest Federalism

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Abstract

State and local governments have long maintained regulatory authority to manage natural resources, and most subnational governments have politically exercised that authority to some degree. Policy makers, however, have increasingly recognized that the dynamic attributes of natural resources make them difficult to manage on any one scale of government. As a result, the nation has shifted toward multilevel governance known as "dynamic federalism" for many if not most regulatory subject areas, especially in the context of the natural environment. The nation has done so both legally and politically—the constitutional validity of expanded federal regulatory authority over resources has consistently been upheld by courts in recent decades, and federal, state, and local governments have been increasingly politically engaged in addressing environmental harms. Yet, remnants of "dual federalism"—which conceives of

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constitutionally protected, separate spheres of governance as between the federal and state governments—impact the governance of certain resources, like subnational forests. The preservation of the nation's forests, in turn, is critical to environmental well-being in the coming decades, especially when considering the crucial role of forests in combating climate change. The entrenchment of legal and political dualism in the forest context stymies federal inputs into subnational forest management at a time when state and local governments are unlikely, given current trends, to curb the destruction of a significant acreage of the nation's forests over the next fifty years. This Article, first, uses forest resources as a case study to shed light on the broader constitutional debate regarding dual versus dynamic regulatory approaches in the United States. Second, the Article is the first to thoroughly detail the under-analyzed status of subnational forest management regulation on the dual-dynamic federalism spectrum and the first to make a normative argument that U.S. forest policy should become more dynamic to avoid the unmitigated destruction of resources of increasing value to the nation, and indeed the globe, in a time of climate change.

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I. Introduction

Our world is composed of dynamic natural resources.[1] In the natural environment forests burn, rivers flood, sea levels rise, and climate changes. Yet human influence adds an extra, and potentially more potent, layer of dynamism on top of these already dynamic natural processes. Just consider that by 1920 humans had reduced U.S. forest cover by nearly half,[2] and over

1. Portions of this Article formed foundational research for Chapter 5 of the author's book, published in 2014. *See* BLAKE HUDSON, CONSTITUTIONS AND THE COMMONS: THE IMPACT OF FEDERAL GOVERNANCE ON LOCAL, NATIONAL, AND GLOBAL RESOURCE MANAGEMENT (2014).

2. Forest cover by 1920 had been reduced by 43%, though forest resources

the last century development has claimed over half of all wetlands in North America.[3] Humans have extracted, consumed, and released millions of years' worth of stored carbon during the last century and a half alone,[4] thereby altering natural background processes of climate change, sea level rise, and associated disaster events such as hurricane-induced flooding. If we have observed one thing from human interaction with dynamic resources, it is that our ability to adaptively and effectively manage those resources is often quite *undynamic* in its own right. Society often fails to harness effective tools of environmental law and policy until scarcity, disaster, or other resource management challenges arise. One only has to look to polluted rivers catching on fire in the 1970's, the ever-so-slowly recovering ozone layer, the widespread destruction of flood disaster-mitigating coastal wetlands, or deforestation's high contribution to annual global carbon emissions to find examples of human failure to proactively prevent resource crises.[5] Instead of continuing to allow dynamic shifts in resource use and preservation to outpace legal and policy solutions, a key challenge faced by modern society is to find congruity between the shifts and the solutions.

One of the ways society has sought to achieve dynamic responses to resource management challenges is by utilizing a federal system of government, whereby a nested set of local, state, and federal governments can each flexibly maintain inputs

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have since rebounded to cover approximately 75% of their historical baseline. JAMES RASBAND, JAMES SALZMAN & MARK SQUILLACE, NATURAL RESOURCES LAW AND POLICY 1198–1200 (2d ed. 2009).

3. David Moreno-Mateos et al., *Structural and Functional Loss in Restored Wetland Ecosystems*, 10 PLOS BIOLOGY 1, 1 (Jan. 2012) http://www.plosbiology.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pbio.1001247&representation=PDF.

4. *See Changes in the Carbon Cycle*, NASA EARTH OBSERVATORY, http://earthobservatory.nasa.gov/Features/CarbonCycle/page4.php (last visited Sept. 24, 2014) (discussing and providing graphs on the carbon cycle changes that have taken place since the beginning of the Industrial Revolution) (on file with the Washington and Lee Law Review).

5. *See* DAVID N. WEAR & JOHN G. GREIS, U.S. FOREST SERV., THE SOUTHERN FOREST FUTURES PROJECT: SUMMARY REPORT 26–31, 35 (2011), http://www.srs.fs.usda.gov/futures/reports/draft/summary_report.pdf (discussing the projected effects of deforestation on the southern United States).

into resource management.[6] Yet we often see inaction at one or more of these levels, effectively facilitating or exacerbating resource overexploitation. This inaction may result for one of two primary reasons—either a level of government politically refuses to design effective resource management inputs, or a level of government is legally constrained from doing so due to the allocation of governance authority as established by national or state constitutional or legislative authorities.[7] Regardless of whether inaction is due to political or legal constraints, this undynamic form of federalism is increasingly unworkable for addressing some of the most pressing resource challenges. Such is the case with the resource category this Article uses as a case study to explore resource management challenges associated with undynamic federalism—U.S. forests. U.S. forests provide not only critical local goods and services but also play a key role in global climate change regulation, serving as a critical carbon sink.[8] U.S. forests have a dynamic history, having returned to fairly stable levels just last century.[9] Yet recent changes in forest markets and ownership combined with dynamic processes like urbanization, climate change, and species invasions are projected to place great strains on United States forest resources once more—with recent government reports forecasting a new and significant phase of deforestation in the southeastern United States in particular.[10]

Despite new threats that U.S. forest resources may face over the coming decades, the legal regulatory framework for forest management in the U.S. is anything but dynamic and is in need of an overhaul. Intertwined with this institutional need is a needed reassessment of the political attention that all levels of government currently place on U.S. forest management. The U.S. federal government maintains direct inputs into the management

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6. *See infra* Part III.A (discussing the regulatory framework implemented in the United States to manage forests).

7. *See* Blake Hudson & Jonathan Rosenbloom, *Uncommon Approaches to Commons Problems: Nested Governance Commons and Climate Change*, 64 HASTINGS L.J. 1273, 1277–78 (2013) (discussing both the legal and political barriers that prevent collective action across local, state, and federal levels of government).

8. *Infra* Part III.A.1.

9. RASBAND ET AL., *supra* note 2.

10. *See* WEAR & GREIS, *supra* note 5 (projecting that the southern United States will lose between 11 and 23 million acres of its forested lands by 2060).

of only the 35% of forests over which it has control, and sustains fairly high forest management standards on those forestlands.[11] The fifty state governments and their political subdivisions are primarily responsible for managing the 60% of U.S. forests in private control and the 5% owned by state governments.[12] State and local governments in the United States, however, are grossly inconsistent in their regulatory approaches to forest management. Many states promote—with mixed results—a variety of incentive-based instruments and programs to influence private landowner forest management, including the use of land use instruments (easements), fiscal incentives (cost–share arrangements and tax policies), liability limitations ("right to practice forestry" laws), market initiatives (ecolabeling, mitigation banking, and carbon offset programs), and increased education and capacity building.[13] Yet, only a handful of states maintain substantive forest management regulatory standards.[14]

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11. ARNOLDO CONTRERAS-HERMOSILLA, HANS M. GREGERSEN & ANDY WHITE, FORREST SYSTEMS IN COUNTRIES WITH FEDERAL SYSTEMS OF GOVERNMENT: LESSONS AND IMPLICATIONS FOR DECENTRALIZATION 4 (2008), http://www.cifor.org/publications/pdf_files/Books/BContreras-Hermosilla0701.pdf; CONSTANCE L. MCDERMOTT ET AL., GLOBAL ENVIRONMENTAL FOREST POLICIES: AN INTERNATIONAL COMPARISON 84 (2010).

12. U.N. ENV'T PROGRAMME, STATE OF THE ENVIRONMENT AND POLICY RETROSPECTIVE 110 (2002), http://www.unep.org/geo/GEO3/english/pdfs/chapter2-3_forests.pdf.

13. *See, e.g.*, N.Y. ENVTL. CONSERV. § 9-0815 (McKinney 2013) (requesting comments on local laws and ordinances dealing with the practice of forestry); FLORIDA RANCHLANDS ENVIRONMENTAL SERVICES PROJECT (2012), http://www.fresp.org/ (last visited Sept. 24, 2014) (organizing a group to address environmental problems in south Florida) (on file with the Washington and Lee Law Review); RENÉE JOHNSON, CONG. RESEARCH SERV., RL33898, CLIMATE CHANGE: THE ROLE OF THE U.S. AGRICULTURE SECTOR 21–24 (2009), (discussing different state and regional climate initiatives); DONALD B. PEDERSEN & KEITH G. MEYER, AGRICULTURAL LAW IN A NUTSHELL 369–70 (West Publishing 1995) (discussing the concept of agricultural districts); *see also* Jacob T. Cremer, *Tractors Versus Bulldozers: Integrating Growth Management and Ecosystem Services to Conserve Agriculture*, 39 ENVTL. L. REP. NEWS & ANALYSIS 10541, 10546 (2009) (discussing the efforts taken by the Florida Ranchlands Environmental Services project) (citing Sarah Lynch & Leonard Shabman, *Valuing Ecosystem Services on Florida Ranchlands: Lessons Learned*, from *The Florida Ranchlands Environmental Services Project: Field Testing a Pay-for-Environmental Services Program*, 165 RESOURCES 17 (2007)). Although many of these programs are aimed primarily at agriculture, they include forest activities as well.

14. *See, e.g.*, MCDERMOTT ET AL., *supra* note 11; OR. ADMIN. R.

Furthermore, even these regulations are often aimed primarily at the most basic and fundamental principles of industrial-scale timber management, and do not even begin to address the preservation or re-establishment of forestland that may be needed to mitigate the perpetual rise of atmospheric carbon concentrations, the habitat fragmentation that increasingly places biodiversity in jeopardy, and the erosion that is increasingly leading to the eutrophication of U.S. waters, only to name a few environmental problems associated with forest loss. Many more states maintain no forest management standards at all. Similarly, while a number of local governments (counties and municipalities) maintain forest management regulatory policies,[15] many more do not.[16]

The inconsistencies across federal, state, and local forest policies in the United States arise largely due to distinct political cultures across jurisdictions. Some inconsistencies, however, arise due to potential legal constraints placed on certain levels of government. Constitutional limitations on the federal government to engage in land use planning traditionally the role of state and local governments and preemption of local government forest policies by state legislative or constitutional mandates provide just a couple of examples.[17] Regardless of

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660-015-0000(14) (discussing Oregon's urban growth boundaries, and their role in protecting agricultural and forestland); Oregon Dep't of Land Cons. & Dev., *Rural Development in Oregon,* OREGON.GOV, http://www.oregon.gov/LCD/pages/ruraldev.aspx#Rural_Development_in_Oregon (last visited Sept. 24, 2014) (discussing Oregon's statewide program to protect farm and forestland) (on file with the Washington and Lee Law Review); PEDERSEN & MEYER, *supra* note 13, at 373–77 (noting that several states create agricultural districts by offering certain benefits to landowners in return for covenants running with the land that promote agricultural preservation).

15. *See*, *e.g.*, Washington County, Md., Forest Conservation Ordinance (Dec. 31, 2013) (setting out a county-wide plan for environmental preservation); The Maryland Forest Conservation Act, MD. CODE ANN., NAT. RES. §§ 5-1601 to 1612 (setting out a series of forest conservation plans); *Forest Conservation Ordinance,* WASHINGTON COUNTY, MARYLAND: DEPARTMENT OF PLANNING AND ZONING, *available at* http://www.washco-md.net/planning/forest.shtm (last visited Sept. 24, 2014) (describing the impetus and purpose of the Washington County Forest Conservation Ordinance) (on file with the Washington and Lee Law Review).

16. *See* MCDERMOTT ET AL., *supra* note 11, at 339–50 (describing different standards, and their shortcomings, at lower levels of government).

17. *See* Hudson & Rosenbloom, *supra* note 7, at 1279–80 (discussing some

whether these inconsistencies are due to political or legal factors, if the nation is to proactively address the grave threats to U.S. forests in the coming decades it will need dynamic action at all levels to achieve effective forest management that sustains the wide range of values provided by forests. To do so policy makers will need to overcome problems of both political will and questions of legal authority and will need a new form of what scholars have termed "dynamic federalism" to maintain a proper pace with dynamic resource management challenges in the United States. A shift toward greater dynamism in U.S. forest policy will be crucial to avoiding or mitigating the major threats to U.S. forest resources in the coming decades—threats that endanger not only local and national goods and services but also global services in the face of a changing climate.

This Article is novel in that most legal scholarship on U.S. forests focuses on federal forestlands, which only constitute 35% of the nation's forests. As such, this Article will provide a needed holistic, descriptive analysis of the state of U.S. forest policy and how subnational forests (state, local, or privately owned forests) are one of the last resources in the nation to remain almost exclusively in the realm of dual federalism. Beyond this descriptive analysis, the Article will make a normative argument that U.S. forest policy should be infused with greater dynamism to protect important domestic forest resources. The Article will do so through the lens of a southeastern forest case study, focusing on the area of the country facing the most severe threats to forests over the coming decades and the area that also maintains arguably the least dynamic forest policy in the nation.

Part II deconstructs the different conceptions of U.S. federalism, distinguishing between the political and legal components of "dynamic" versus "dual" federalism. The Part then briefly details the shift toward dynamic federalism regulatory understandings for most resources in the United States and the current status quo of "bimodal federalism" whereby some resources remain subject to dualistic notions of constitutional federalism. Part III describes where along this dual-dynamic federalism spectrum U.S. forest policy is situated, detailing the

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constraints placed on local, state, and federal governments in implementing environmental or land use policies).

importance of forest resources to the U.S. and the forest regulatory framework and policy options for both federal and subnational governments. This Part discusses the threats to U.S. forests in the coming decades through the lens of a southeastern forest case study, which serves as a proxy for threats to United States forests resources on the whole. The Part next describes U.S. forest federalism as being dual, both legally and politically, and how this leads to voluntary incentive programs at the federal level that are insufficient to adequately coordinate state forest policies and address the threats to U.S. forests. The Part further describes the implications of U.S. forest resources currently being subject to dual conceptions of federalism and concludes with a normative call for dynamism in U.S. forest policy to avoid destruction of crucial forest resources. Part IV then details the context and history of the southeastern forest resource base, which almost tipped toward dynamism early in the twentieth century, and how similarities between the past and current conditions of southern forest resources support a new shift toward dynamism in the present day. Part V concludes by summarizing the foundational arguments of this Article's companion piece, laying a foundation of constitutional arguments for federal minimum standards for subnational forests and what those standards would entail from a legislative perspective.

II. Deconstructing U.S. Federalism: Political and Legal Dynamism Versus Dualism

Expressed in the most simplified terms, dynamic federalism means that all levels of government in a federal system maintain legal authority to politically act within a given policy arena—from the federal government, to state governments, to local governments. This legal freedom provides the greatest chance for effective political action to take place at the appropriate governmental level. Furthermore, for federalism to be truly dynamic, each of those governmental levels must be actively engaged in the political process. As discussed in greater detail below, both the legal authority and political action questions play a role in the woefully undynamic nature of U.S. forest policy. As such, the following parts describe what precisely legal and

political dynamism and dualism entail, detail the trend toward dynamic federalism both legally and politically in the United States, and describe the current status of U.S. federalism as being "bimodal"—that is, maintaining elements of both dynamic and dual federalism.

A. Legal Dynamism Versus Dualism

If there is one matter upon which the legal community can unanimously agree, it is that the U.S. Constitution establishes a federal system of government. The unanimity regarding U.S. federal constitutional structure, however, ends there. The mode of federalism the U.S. maintains has become the subject of great debate, both regarding descriptive jurisprudential claims of how federalism *in fact* operates in the United States normative claims of how federalism *should* operate. Though this debate has waged for some time, its relevance renews as we see dynamic shifts in the conservation status and recognized value of resources in the face of a changing climate, increasing population and development pressures, and changing economic drivers of supply and demand for natural resources. How legal authority is allocated among levels of government in a federal system determines whether regulatory solutions for resource challenges can be crafted at certain levels. As a result, the constitutional theory of federalism that prevails has important implications for natural resource governance.

Some scholars and policy makers prefer to conceive of the United States as currently maintaining a system of "dynamic federalism" whereby any level of government maintains constitutional authority to regulate any subject matter, and in which there are no separate spheres of governance as between federal, state, and local governments. Dynamic federalism "rejects any conception of federalism that separates federal and state authority under the dualist notion that the states need a sphere of authority protected from the influence of the federal government" and posits that "federal and state governments function as alternative centers of power and *any matter* is presumptively within the authority of both the federal and the state

governments."[18] Others maintain a different conception of U.S. federalism known as "dual federalism," positing that "the states and the federal government inhabit[] mutually exclusive spheres of power."[19] In other words, proponents of dual federalism argue that separate spheres of regulatory authority do in fact exist, and the respective federal and state governments (including state government subdivisions) may not regulate in areas constitutionally reserved for the other.

These polar positions drive much of the judicial and academic wrangling over whether, for example, under the Commerce Clause the federal government can regulate matters of traditional state regulatory authority or whether state and local governments can regulate matters that the federal government claims are preempted by federal authority.[20] As evidenced by an increase in preemptive efforts at both the federal[21] and state[22] levels and recent cases on topics ranging from criminal activity near schools,[23] domestic violence,[24]

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18. Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006) (emphasis added).

19. *Id*. at 175; *see* Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 157 (2005) (stating that the normative approach to environmental regulation does not line up with the actual approach utilized); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 587 (1996) (arguing that environmental regulation can create negative externalities where the jurisdiction of the regulatory entity is too narrow); Richard O. Zerbe, *Optimal Environmental Jurisdictions*, 4 ECOLOGY L.Q. 193, 245 (1974) (discussing the detrimental effects of structural mismatches in environmental regimes); *see generally* Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE. L. & POL'Y REV. 23 (1996) (arguing against the centralization of environmental regulatory and legislative power).

20. *See infra* note 61 (discussing debates over the Commerce Clause).

21. *See* Engel, *supra* note 18, at 184–87 (discussing the threat that federal preemption poses to principles of federalism).

22. *See generally* Jonathan Rosenbloom, *New Day at the Pool: State Preemption, Common Pool Resources, and Non-Place Based Municipal Collaborations*, 36 HARV. ENVTL. L. REV. 445 (2012) (discussing the adverse effect that state preemption can have on local governments' attempts to introduce environmental regulation).

23. *See* United States v. Lopez, 514 U.S. 549, 551 (1995) (holding that the Guns Free School Zones Act exceeded Congress' power under the Commerce Clause).

24. *See* United States v. Morrison, 529 U.S. 598, 601 (2000) (finding that

wetlands preservation,[25] medical marijuana,[26] and health care (or, "Obamacare"),[27] legal debates over the constitutional workings of U.S. federalism continue to define a variety of regulatory subject areas.

Dynamic federalism theory calls into question previously held duel federalism-driven assumptions that "regulatory authority to address environmental ills should be allocated to one

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the Commerce Clause did not give Congress the power to enact the Violence Against Women Act).

25. *See* Rapanos v. United States, 547 U.S. 715, 739 (2006) (plurality opinion) (defining narrowly "navigable waters" under the Clean Water Act to include those waters with a "significant nexus" to traditional navigable waters); Solid Waste Agency of N. Cook Cnty. v. Army Corps of Eng'rs, 531 U.S. 159, 174 (2001) (construing the Clean Water Act to not include isolated wetlands that are a stopping point for migratory birds under the federal government's jurisdictional reach).

26. *See* Gonzales v. Raich, 545 U.S. 1 (2005) (holding that the provision in the Controlled Substances Act that banned the possession, distribution, or manufacture of marijuana was permissible under the Commerce Clause).

27. In *National Federation of Independent Business v. Sebelius*, 132 S. Ct. 2566 (2012), the U.S. Supreme Court gave new life to "new federalist" arguments that arose after *Lopez* and *Morrison* by refusing to uphold the Affordable Care Act under the Commerce Clause. *Id.* at 2585–93. Instead, the Court upheld the Act under the power to tax. *Id.* at 2593–601. Justice Roberts, in refusing to uphold the individual mandate portion of the Affordable Care Act as constitutional under the Commerce Clause, stated:

> Construing the Commerce Clause to permit Congress to regulate individuals precisely because they are doing nothing would open a new and potentially vast domain to congressional authority. Congress already possesses expansive power to regulate what people do. Upholding the Affordable Care Act under the Commerce Clause would give Congress the same license to regulate what people do not do. The Framers knew the difference between doing something and doing nothing. They gave Congress the power to regulate commerce, not to compel it. Ignoring that distinction would undermine the principle that the Federal Government is a government of limited and enumerated powers. The individual mandate thus cannot be sustained under Congress's power to "regulate Commerce."

Id. at 2573; *see also* Tom Scocca, *Obama Wins the Battle, Roberts Wins the War*, SLATE.COM (June 28, 2012 11:59 AM), http://www.slate.com/articles/news_and_politics/scocca/2012/06/roberts_health_care_opinion_commerce_clause_the_real_reason_the_chief_justice_upheld_obamacare_.html (last visited Sept. 24, 2014) (arguing that the *Sebelius* decision's narrow interpretation of the Commerce Clause further restricts Congress' Commerce Clause powers) (on file with the Washington and Lee Law Review).

or the other level of government with minimal overlap."[28] Professor Engel has argued that:

> a static allocation of authority between the state and federal government is inconsistent with the process of policymaking in our federal system, in which multiple levels of government interact in the regulatory process. Absent constitutional changes that would lock in a specific allocation of authority, broad, overlapping authority between levels of government may be essential to prompting regulatory activity at the preferred level of government.[29]

Dynamic federalism recognizes the importance of multilevel allocations of regulatory authority in federal systems and "conceives the states and the federal government as alternative—not mutually exclusive—sources of regulatory authority."[30] Dynamic regulatory approaches may be practically applied by, for example, crafting federal legislation that allows subnational governments flexibility to regulate within a "standards framework" provided by the federal government, such that, for example, "where national uniformity is desired, Congress might allow for the development of a single standard by the states themselves, as opposed to the imposition of a single standard by the states themselves."[31] So an effective dynamic governance approach does not fully supplant authority at particular levels of government but rather creates a system of supplemental governance at all levels whereby the federal government may set a target, limit, or other regulatory goal and allows subnational governments either the ability to take into account local considerations when designing mechanisms to achieve that target or limit, or the flexibility to design their own regulatory

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28. Engel, *supra* note 18, at 161.

29. *Id*.

30. *Id.* at 162.

31. *Id.* Given that the loss of forest carbon sequestration capabilities in the face of climate change is nothing more than a slow-moving disaster, dynamic federalism echoes disaster scholar Charles Perrow's call for "[f]ederal and state governments [to] establish minimum standards, which states or localities can exceed." CHARLES PERROW, THE NEXT CATASTROPHE: REDUCING OUR VULNERABILITIES TO NATURAL, INDUSTRIAL, AND TERRORIST DISASTERS 36 (2007). In other words, the goal is to establish floors rather than ceilings of environmental and land-use standards. Engel, *supra* note 18, at 185.

standards supplemental to federal regulations.[32] The synergies that a dynamic approach provides "can lead either, or both, parties to adopt policy positions significantly different from the positions they would have adopted had they been regulating in a vacuum,"[33] and "has important benefits in terms of developing quality, responsive regulation, and spreading regulatory innovations."[34]

Proponents of dual federalism, on the other hand, posit that maintaining distinct boundaries between federal and state regulatory authority in some subject areas leads to more responsive governance, increased governmental competition, innovation, participatory democracy, and a guard against the potential tyranny of central authority.[35] The argument is that states are closer to their respective constituencies than is the federal government, can better allocate the economic resources of the citizenry, and should be able to do so free of federal interference.[36] In addition, federalism may act as a

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32. Indeed, as dynamic federalism scholars have highlighted, "overlapping jurisdiction may be pivotal to encouraging the more appropriate level of government to respond to a given problem." Engel, *supra* note 18, at 177.

33. *Id.* at 171.

34. *Id.* at 173. Other scholars, such as Professor Osofsky, have promoted "diagonal federalism" strategies that "incorporate key public and private actors at different levels of government (the vertical piece) and within each level of government (the horizontal piece) simultaneously in order to create needed crosscutting interactions." Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALA. L. REV. 237, 241 (2011). In the disaster and land-use context "[t]here is evidence of a shift in governmental policy towards the vertical integration of federal, state, and local governmental action in order to most effectively and comprehensively address land development in disaster prone areas as well as a host of other economic development and environmental problems." John R. Nolon, *Disaster Mitigation Through Land Use Strategies*, 23 PACE ENVTL. L. REV. 959, 964 (2006).

35. *See* Robert A. Schapiro, *Toward a Theory of Interactive Federalism*, 91 IOWA L. REV. 243, 266 (2005) (laying out the arguments supporting dual federalism).

36. *See generally* DAVID L. SHAPIRO, FEDERALISM: A DIALOGUE 77–85 (1995) (describing issues with federalist approaches); Friedrich A. Hayek, *The Economic Conditions of Interstate Federalism,* NEW COMMONWEALTH Q, September 1939, at 131, *reprinted in* FRIEDRICH A. HAYEK, INDIVIDUALISM AND ECONOMIC ORDER 255, 268 (1948) (discussing the efficiency related to carrying out economic plans on a smaller state or local scale); William W. Bratton & Joseph A. McCahery, *The New Economics of Jurisdictional Competition: Devolutionary Federalism in a Second-Best World*, 86 GEO. L.J. 201 (1997) (arguing for the economic benefit of jurisdictional competition); Barry R.

"constitutional antitrust principle," preventing the federal government from interfering with state competition.[37] Also, state citizens availing themselves of their own protected sphere of legal authority might be more likely to participate in the democratic process because that sphere cannot be wrenched away from the state citizenry by an external authority.[38] Finally, dual federalist proponents argue that without a constitutionally protected, separate sphere states would be unable to prevent abuse by a majoritarian federal government that might disregard regional interests.[39]

B. Political Dynamism Versus Dualism

While the question of legal dynamism versus dualism turns on difficult assessments of the constitutional allocation of governance authority among levels of government, political dynamism versus dualism turns on a much less complex assessment. The terms "political dynamism" and "political dualism" are used in this Article to merely assess whether each level of government—assuming each maintains legal authority to act—is actually engaged in exercising that legal authority. Or whether, on the other hand, certain levels of government choose to leave policy making entirely to another level of government.

Weingast, *The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development*, 11 J.L. ECON. & ORG. 1, 1 (1995) (introducing issues caused by regulation in America and England); Jacques LeBoeuf, *The Economics of Federalism and the Proper Scope of the Federal Commerce Power*, 31 SAN DIEGO L. REV. 555, 556 (1994) (arguing that federal regulation under the Commerce Clause is proper only where state regulation would be inefficient due to widespread externalities); Michael W. McConnell, *Federalism: Evaluating the Founders' Design*, 54 U. CHI. L. REV. 1484, 1493–98 (1987) (arguing against federal interference); Charles M. Tiebout, *A Pure Theory of Local Expenditure*, 64 J. POL. ECON. 416 (1956) (arguing for an allowance of broad local expenditures because of the greater role individuals can play in local government action as opposed to the federal government).

37. Schapiro, *supra* note 35, at 267 (stating that federalism allows the states to compete and prevents them from entering into an agreement, via federal law, to act in anticompetitive ways).

38. *Id.* at 270–71 (arguing that federalism promotes republicanism and encourages the citizenry to vote).

39. *Id.* at 272–73 (stating that federalism protects individuals' liberty interests, especially those tied to regional differences).

We might understand political dynamism in resource management as regulatory policy development at all levels of government to sustainably manage resources. So, for example, perhaps the federal government creates a minimum standards framework for forest management within which states maintain flexibility in implementation. The states might also go above the floor set by federal regulation and implement more stringent standards. The states, in turn, would allow flexibility among local governments to meet standards or hit targets. This approach allows each level of government to maintain inputs into the management scheme if each chooses politically to do so. Political dualism, on the other hand, occurs when certain levels of government choose not to take policy action and therefore leave the resource management challenge for other levels of government to address.

A few clarifications should here be made. First, this Article uses "political action" to refer to the development of regulatory standards, not policy instruments that take on a less prescriptive form. Regarding subnational forest management, for example, there are a variety of voluntary or incentive based programs that are offered at all levels of government (through tax policy, subsidies, etc.). Yet, a premise of this Article is that while those are certainly important programs, and should be continued, standing alone they are simply unlikely to forestall the threats facing U.S. forests in the coming decades. As a result, regulatory action across scales and coordination among levels of government in enacting those policies will be crucial. So this Article does not conceive of federal subsidies provided to forest owners to plant trees coupled with voluntary state forest "best management practices" to be politically dynamic. Rather, regulatory policies at each level that work together to conserve and preserve forest resources through minimum standards, regulatory floors, or heightened conservation targets are what this Article views as politically dynamic action in the forest management context.

Second, political dynamism as understood in this Article is not about separate, comprehensive regulatory regimes at all levels of government, which could very well be a duplicative, conflicting, and inefficient harnessing of the regulatory process federalism aims to facilitate. Rather, political dynamism is about engaging all levels in the process of determining the best policy

across federal scales. Clearly if the federal government had legal authority in an area and maintained a comprehensive policy, the policy may lend itself to state and local governments playing a lesser (or implementary) role to the extent that they are satisfied with the policy. On the other hand, state or local governments may take the lead in developing comprehensive policies with the federal government only stepping in to address holes or regulatory failures within lower level policies. As Professor Engel argues, the constitutional empowerment of all levels of government in the process of determining a cross-cutting, scalar policy can facilitate optimal regulatory roles taking place within the appropriate scale of government.[40]

C. Shift Toward Dynamic Federalism

Having established how this Article uses the terms legal and political dynamism and dualism, this subpart turns to the current status of legal and political federalism in the United States. In recent decades the nation has moved toward dynamic regulatory approaches, both legally and politically, on most subject matters, especially in the environmental context. State and local governments have by and large always maintained constitutional authority to regulate environmental resources, primarily through their common law police power.[41] Yet, once the federal government's spate of environmental statutes enacted by Congress beginning in the 1970's were constitutionally validated in the courts via expansion of federal Commerce Clause authority, a constitutionally dynamic environmental regulatory state was born for most environmental subject matters.[42] The

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40. *See* Engel, *supra* note 18, at 161 (stating that the static allocation of environmental management authority to one level of government is against the federalist principles underlying the Constitution, and that overlapping regulatory authority allows for a system of checks and balances in environmental regulation).

41. *See* Mugler v. Kansas, 123 U.S. 623, 646–47 (1887) (stating that constitutionally a state may only restrain private property use through exercise of its police power, and determining that a proper exercise of that power is that which "is necessary and reasonable for guarding against the evil which injures or threatens the [general] welfare in the given case").

42. *See* ROBIN KUNDIS CRAIG, CONSTITUTIONAL ISSUES IN ENVIRONMENTAL LITIGATION: SOME REFLECTIONS ON RECENT LITIGATION AND PREDICTIONS FOR THE

federal government regulates endangered species, hazardous wastes, water quality, air quality, and other resources and types of pollution.[43] States, however, also maintain the authority to regulate in those areas, either by implementing the federal regulatory regime or by going above and beyond the floor set at the federal level with individual state policies.[44]

So, for example, the Endangered Species Act (ESA),[45] Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),[46] Resource Conservation and Recovery Act (RCRA),[47] Clean Water Act (CWA),[48] and Clean Air Act (CAA),[49] just to name a few federal environmental statutes, demonstrate that the regulation of the resources in those statutes is legally dynamic. Each of these statutes has been constitutionally validated, allowing the federal government to prescriptively and directly regulate the resource at issue, at least to a substantial extent. Yet, for each of these subject matters, subnational governments are constitutionally empowered to prescriptively regulate with legislation above or in addition to federal minimum standards. For the most part, states can establish their own endangered species,[50] waste,[51]

FUTURE 2 (2005), http://apps.americanbar.org/environ/committees/constlaw/Craigpresentation.pdf (discussing the fact that when environmental laws were adopted under Congress' Commerce Clause powers in the 1970s, the Supreme Court had not struck down Commerce Clause legislation for decades).

43. *See, e.g.*, 16 U.S.C. § 1533 (2012) (authorizing the federal government to classify species as endangered and threatened); 42 U.S.C. § 6928 (authorizing federal enforcement of violations of hazardous waste provisions); *id.* § 7409 (authorizing the establishment of federal air quality standards).

44. *See, e.g.*, VA. CODE ANN. § 29.1-564 (West 2014) (prohibiting the transportation, possession, and sale of any species listed on the federal endangered species list); *id.* § 10.1-1421 (allowing the state to recover the costs associated with cleaning up hazardous waste from persons who abandon facilities that handle hazardous waste).

45. Endangered Species Act, 16 U.S.C. §§ 1531–1544 (2012).

46. Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–9675 (2012).

47. Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901–6992k (2012).

48. Clean Water Act, 33 U.S.C. §§ 1251–1387 (2012).

49. Clean Air Act, 42 U.S.C. §§ 7401–7671q (2012).

50. *See, e.g.*, Florida's Endangered and Threatened Species Act, FLA. STAT. § 379.2291 (2010) (protecting endangered and threatened species in Florida).

51. *See, e.g.*, Missouri's Hazardous Waste Management Law, MO. REV.

water,[52] or air regulations,[53] though some actions—mobile sources under the CAA, as just one example—may be preempted by the federal government (an indication that constitutional dualism can run both ways, with the federal government sometimes resisting potentially efficacious subnational regulatory inputs).[54] Many states have chosen to make governance of these resources politically dynamic as well, developing policies supplemental to these federal statutes for endangered species, waste, water, and air regulation.[55]

In short, dual federalism no longer reflects the U.S. environmental federalism status quo in that the federal government regulates a variety of purely local activities while state and local governments address issues of national and even global concern.[56] Dynamic federalism more accurately describes

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STAT. §§ 260.350–.434 (2014) (creating state standards to be followed for the disposal of waste).

52. *See, e.g.*, Washington's Water Pollution Control Act, WASH. REV. CODE § 90.48.010–.910 (2014) (ensuring high standards of water purity in Washington state).

53. *See, e.g.*, California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2014) (creating environmental standards meant to mitigate the effects of global warming).

54. *See* Engel, *supra* note 18, at 184–87 (discussing the threat that preemption poses to principles of federalism).

55. *See supra* notes 50–53 (providing examples of U.S. state environmental legislation).

56. *See* Engel, *supra* note 18, at 167–68 (noting that state and local governments cannot effectively combat issues of global significance, such as climate change, because these issues produce externalities far beyond a single state's borders). Most dynamic federalism literature is not debating the constitutionality of governance at certain levels but rather recognizes that for the most part there is concurrent authority between federal and state governments. As a result, most federalism scholarship in this area does not question what is constitutional but rather what form or structure of governance is best. For examples, see generally BARRY G. RABE, STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY 1–37 (2004) (discussing the split between federal and state environmental legislation and regulation); Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121, 128–51 (2004) (discussing the emerging role states have played in developing climate change policy); Marc K. Landy, *Local Government and Environmental Policy*, *in* DILEMMAS OF SCALE IN AMERICA'S FEDERAL DEMOCRACY 227 (1999) (discussing the increasingly important role decentralization has played in U.S. environmental policy); Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253 (2009)

how many, if not most, federal and state regulatory interactions occur can be considered a positive development in the environmental context. Regulated natural resources are so inextricably interconnected, dynamic federalism appears the more appropriate normative theory of federalism to achieve successful legal and policy results on the ground.

(discussing the need for both federal and state action in developing environmental policy); Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615 (2009) (discussing the emerging prevalence of a international standard for environmental law; and that standard's impact on federal, state, and local law); David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835 (2008) (stating that local legislation and regulation are often relied upon deal with the global issues raised by climate change); Robert B. Ahdieh, *When Subnational Meets International: The Politics and Place of Cities, States, and Provinces in the World*, 102 AM. SOC'Y INT'L L. PROC. 339 (2008) (discussing the role of federalism in international law); Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008) (discussing the strong role that subnational governments play in climate regulation and legislation); Michael P. Vandenbergh, Jack Barkenbus & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008) (discussing the role that federal, state, and local regulation can play to reduce greenhouse gas emissions in the U.S.); B. Ahdieh, *From Federalism to Intersystemic Governance: The Changing Nature of Modern Jurisdiction*, 57 EMORY L.J. 1 (2007) (noting that changes in the interaction between the federal government and state and local governments have resulted in expanding the power of the federal government); Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007) (discussing the emergence of climate change legislation at a variety of different levels of government); Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863 (2006) (discussing the cross-jurisdictional interaction that has taken place between different regulators on local, state, and federal levels); Kirsten Engel, *State and Local Climate Change Initiatives: What Is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006) (discussing the role that the increase in state and local environmental regulation plays in federalism); Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564 (2006) (discussing the role that federalism plays in the development of international human rights law); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53 (2003) (discussing the role that local regulation plays on the global issue of climate change); Joseph W. Dellapenna, *Law in a Shrinking World: The Interaction of Science and Technology with International Law*, 88 KY. L.J. 809 (2000) (discussing the necessity for legal issues relating to technology to be dealt with on a global and not local level).

Yet, for certain regulatory subject matter, remnants of dual federalism remain, notwithstanding expansion of recognized federal regulatory authority under the Commerce Clause over the last four decades. These remnants also form an integral part of the current scope of U.S. constitutional federalism.[57] Direct land-use regulation, including subnational forest management, remains an area where strong notions that "states need a sphere of authority protected from the influence of the federal government" do in fact remain, regardless of normative claims that constitutional dynamism would result in better governance of the environment.[58] These dynamic–dualist debates not only have implications for national versus subnational governance of resources in the Commerce Clause context but also international governance of resources, as evidenced by the nationalist and federalist debates on the scope of the Treaty Power.[59] The next subpart describes how these remnants of dual federalism integrate into the otherwise dynamic environmental federalism that has taken hold over the last four decades to create a bimodal federalism governance framework.

D. The Reality: Bimodal Federalism

The term "bimodal federalism" simply means that two modes of federalism operate in the United States depending on the subject matter of regulation.[60] Most regulation in the United

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57. As Professor Schapiro has noted, "the basic conception of federalism continues to be a system of independent national and state governments that must be protected from each other" and that "[d]ualist conceptions survive" in some areas. Schapiro, *supra* note 35, at 246.

58. Engel, *supra* note 18, at 176.

59. *See* HUDSON, *supra* note 1, at 207–20 (2014) (providing a critical analysis of the restraints which the U.S. Constitution places on various levels of government in the U.S., hampering their ability to manage domestic resources); Blake Hudson, *Climate Change, Forests and Federalism: Seeing the Treaty for the Trees*, 82 U. COLO. L. REV. 363 (2011) (discussing the need to further explore the role of federalism in international treaties relating the climate change and forest management).

60. *See* Blake Hudson, *Reconstituting Land Use Federalism to Address Transitory and Perpetual Disasters: The Bimodal Federalism Framework*, 2011 BYU L. REV. 1991 (2011). The word "bimodal" simply means "having or providing two modes, methods, [or] systems." The word "bimodal" simply means "having or relating to two modes." MERRIAM–WEBSTER'S COLLEGIATE DICTIONARY

States may indeed occur in a dynamic manner as local governments are constitutionally empowered to regulate matters of state or national import and the federal government is constitutionally empowered to regulate matters of almost entirely local concern. In addition, all levels of government share and exercise regulatory responsibilities over much subject matter. Even so, we also see important remnants of dual federalism impacting governance across scales—and in particular in areas of natural resource management implicating land use (such as forest management). These remnants remain either because jurisprudence has not yet affirmed the validity of dynamic regulatory approaches in those areas or because legislators perceive—based on either genuine constitutional interpretation or rather political and ideological predisposition—that legal constraints exist and therefore politically refuse to act. A result of political inaction, of course, is that courts do not have an opportunity to assess the legal viability of dynamic regulatory approaches. In this way, legal perception of whether federalism is dynamic or dual is inextricably intertwined with the question of whether political action is taken at certain levels. In other words, perceptions of *legal* dualism drive *political* dualism and may chill regulatory efforts across scales as policy makers question their own legal authority to act.

Identification of these dual federalism remnants can help policy makers maintain the appropriate baseline from which to make normative claims for constitutional dynamism that allows better protection of dynamic resources like subnational forests. While evidence of dual remnants is probably best represented by the continued debates over the scope of the Commerce Clause[61]

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122 (11th ed. 2011).

61. *See, e.g.*, Randy E. Barnett, *Foreword: Limiting* Raich, 9 LEWIS & CLARK L. REV. 743, 743 (2005) (arguing that the Commerce Clause has been overly broadened); Eric R. Claeys, Raich *and Judicial Conservatism at the Close of the Rehnquist Court*, 9 LEWIS & CLARK L. REV. 791, 794–95 (2005) (describing the divergence that took place between originalist and minimalist approaches, as evidenced in the *Raich* decision); Dan Gildor, *Preserving the Priceless: A Constitutional Amendment to Empower Congress to Preserve, Protect, and Promote the Environment*, 32 ECOLOGY L.Q. 821, 824–30 (2005) (arguing that the constitutional underpinning for modern environmental policy is being brought into question, and that the Commerce Clause does not adequately encompass the ideals that underlay modern environmental policy); Thomas W. Merrill, *Rescuing Federalism After* Raich*: The Case for Clear Statement Rules*, 9 LEWIS &

and in continued discussions in both scholarly literature and judicial decisions lending support to the exclusive regulatory role of state and local governments over land use,[62] other proof may be considered evidence by omission. The federal government has simply never attempted to assert direct regulatory inputs into subnational policies related to certain categories of land uses, like local zoning schemes (growth boundaries, density requirements,

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CLARK L. REV. 823, 844 (2005) (arguing that the "economic" requirement under Commerce Clause jurisprudence was largely gutted by *Raich*); Ernest A. Young, *Just Blowing Smoke? Politics, Doctrine, and the Federalist Revival After* Gonzales v. Raich, 2005 SUP. CT. REV. 1, 8–16 (2005) (discussing the federalist revival after the *Raich* decision); Sarah D. Van Loh, Note, *The Latest and Greatest Commerce Clause Challenges to the Endangered Species Act:* Rancho Viejo *and* GDF Realty, 31 ECOLOGY L.Q. 459, 462 (2004) (arguing that Congress should have the power to regulate intrastate species under the Commerce Clause); Christine A. Klein, *The Environmental Commerce Clause*, 27 HARV. ENVTL. L. REV. 1, 38 (2003) (arguing that federal environmental legislation may be subject to attack if the Court shifts its Commerce Clause jurisprudence from "activity" focused to "object" focused); Bradford C. Mank, *The Murky Future of the Clean Water Act After* SWANCC*: Using a Hydrological Connection Approach to Saving the Clean Water Act*, 30 ECOLOGY L.Q. 811, 844–46 (2003) (discussing the shift in Commerce Clause interpretation that took place in *Lopez* and *Morrison*); Bradford C. Mank, *Protecting Intrastate Threatened Species: Does the Endangered Species Act Encroach on Traditional State Authority and Exceed the Outer Limits of the Commerce Clause?*, 36 GA. L. REV. 723, 735–36 (2002) (discussing the narrowing of the Commerce Clause that took place in *Lopez* and *Morrison*); Eric Brignac, Comment, *The Commerce Clause Justification of Federal Endangered Species Protection:* Gibbs v. Babbitt, 79 N.C. L. REV. 873, 883 (2001) (discussing the untenable nature of the justification for some environmental Commerce Clause precedent after *Lopez* and *Morrison*); Christy H. Dral & Jerry J. Phillips, *Commerce by Another Name*: *The Impact of* United States v. Lopez *and* United States v. Morrison, 68 TENN. L. REV. 605, 605 (2001) (discussing the fact that the *Lopez* and *Morrison* decisions called into question congressional action taken under the Commerce Clause, and arguing that the standards from the two cases are unworkable); Omar N. White, *The Endangered Species Act's Precarious Perch: A Constitutional Analysis Under the Commerce Clause and the Treaty Power*, 27 ECOLOGY L.Q. 215, 235 (2000) (using *Lopez* to determine that "biological diversity is connected to commerce, and that meaningful limits to congressional authority exist with regard to the protection of biological diversity"); John Copeland Nagle, *The Commerce Clause Meets the Delhi Sands Flower-Loving Fly*, 97 MICH. L. REV. 174, 178–79 (1998) (using the Dehli sands flower-loving fly to analyze the impact of the *Lopez* decision on environmental regulation based on the Commerce Clause); Lori J. Warner, *The Potential Impact of* United States v. Lopez *on Environmental Regulation*, 7 DUKE ENVTL. L. & POL'Y F. 321, 324 (1997) (discussing the complex federalism issues raised by the *Lopez* decision).

62. *See infra* notes 174–79 and accompanying text (discussing the historic reservation of land use and forest management power to the states).

etc.), nonpoint source pollution, or private forest management—at least in part because of constitutional considerations.[63]

Thus the full scope of U.S. federalism theory may be understood as increasingly integrating principles of dynamic federalism in combination with as of yet static principles of dual federalism. This integrated view of bimodal federalism more accurately and holistically describes how U.S. federalism operates in the context of present day constitutional scholarly debates and jurisprudence.[64]

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63. For example, nonpoint source water pollution control has been left to the states largely due to its attachment with land use planning regulatory authority. Professor Craig argues that "[c]omprehensive federal regulation of nonpoint source pollution would thus arguably engage the federal government in land use regulation—a type of regulation historically viewed as belonging almost exclusively to more local levels of government" and that "because of federalism restrictions, Congress cannot and has not forced states to assume any regulatory burden with respect to nonpoint sources of water pollution. Therefore, regulation of nonpoint source polluters is left largely to states' individual regulatory discretion." Robin Kundis Craig, *Local or National? The Increasing Federalization of Nonpoint Source Pollution Regulation*, 15 J. ENVTL. L. & LITIG. 179, 182, 186 (2000). Craig goes on to say that "[s]o long as Congress operates within constitutional federalism requirements, its statutory judgment calls are subject to revision if new information or awareness indicates that the initial statutory division of power incorrectly reflects the true balance of the national and local interests at stake." *Id*. at 181. Craig has also argued that

> a constitutional amendment could allow Congress to reenact the federal environmental statutes pursuant to that amendment's grant of legislative authority, freeing them of any lingering Commerce Clause limitations and leaving Congress free to reach the last federally unregulated impediments to environmental quality—such as nonpoint source pollution—currently deemed to be outside the federal regulatory sphere.

See Robin Kundis Craig, *Should There Be a Constitutional Right to a Clean/Healthy Environment?* 34 ENVTL. L. REP. 11013, 11019–20 (2004).

64. As previously described by the author,

> Discussions of multi-scalar, dynamic solutions to federalism problems is certainly important, and the depth of analysis it provides helps curb oversimplification of both the need for and efficacy of different types of solutions to federalism-driven environmental concerns at different levels of government . . . . There is a danger, however, in allowing a focus on the very real benefits of dynamic federalism to detract from recognition of the current constitutional federalism reality. Despite the clear attractiveness of dynamic federalism in achieving better on-the-ground environmental and land-use law and policy responses—the normative claim for how federalism often does and perhaps should operate—the fact remains that while it may not be preferable from an environmental or land-use perspective, dualism

Even though scholars supporting constitutional dynamic federalism argue that federalism should not be judicially or politically protected,[65] and though they question whether courts have the "ability to police the contours of federalism" under doctrines like the Commerce Clause,[66] remnants of dual federalism demonstrate that judicial protections remain in place and courts continue to be in "the business of distinguishing between regulatory matters that are left to the states and those that fall within Congress's jurisdictional reach."[67] Until the federal government seeks direct land-use planning, nonpoint source water pollution, or subnational forest management inputs via legislative means and such legislation is either constitutionally validated or denied by the courts, notions of constitutional dualism on these subject matters will remain unresolved, and courts will continue to engage in judicial protections of federalism by wrangling over constitutional provisions like the Commerce Clause.[68]

Herein lies the importance of understanding bimodal federalism. By focusing so stringently on normative claims that the courts should stop wrangling over judicial protections of federalism, and should stop policing the bounds of the Commerce Clause or federal preemptive authority, there is a risk that scholars may miss important opportunities to make sound arguments about why, even *within* a framework of dualistic limits on the Commerce Clause, for example, certain regulatory subject matter should still be validated as constitutionally dynamic. In other words, advocates miss an opportunity to

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> still informs constitutional federalism jurisprudence in some areas—this, of course, is the descriptive constitutional reality.

Hudson, *supra* note 60, at 2032.

65. *See* Schapiro, *supra* note 35, at 278–80 (discussing arguments for moving beyond legally enforced federalism limits).

66. Engel, *supra* note 18, at 174.

67. *Id.* at 183. It may be true that "such line drawing forces the Court into making superficial distinctions of little relevance to the issue of whether federal regulation is truly appropriate." *Id.* at 184. Whether the federal government should be able to regulate certain subject matters, however, is a distinct question from current judicial interpretations of constitutional structure.

68. *See id.* at 174 (discussing the current disconnect between the actual practice of environmental federalism and the theories that are advocated by scholars).

discuss why regulation of certain dynamic resources meets the current constitutional tests for providing constitutional governance authority at all levels of government. Under current constitutional tests, for example, how would urban growth boundaries or subnational forest policies be validated under the Commerce Clause? As a political matter, should we not begin thinking about how federal regulatory safety nets could be crafted to avoid the damaging threats of urban sprawl and deforestation in the coming decades? These will be crucial questions going forward if the federal government is to act as a failsafe to protect resources threatened by state inaction in these regulatory subject areas. The federal government had to assume this role in the 1970s due to state inaction on water and air quality, and a new wave of regulatory dynamism will be called for in the coming decades as economic development and urban sprawl continue to replace important natural capital resources and if states continue to tend toward inaction—and indeed, states continue to maintain countervailing incentives to permanently appropriate natural capital for the sake of economic development.[69] The next Part analyzes specifically where U.S. forest policy is placed along the dynamic–dual federalism spectrum with a view toward understanding the implications of its current placement.

III. U.S. Forest Policy Situated on the Dynamic–Dual Federalism Spectrum

Though often overlooked in legal scholarship, which focuses almost entirely on federal forests, jurisprudence has long considered subnational forest regulation a state and local government regulatory role and has placed it in a subcategory of direct land use regulation generally. As described in this Part, U.S. forest policy is dominated by strong dualist notions that state and local governments maintain exclusive constitutional

69. *See* Blake Hudson, *Federal Constitutions: The Keystone of Nested Commons Governance*, 63 ALA. L. REV. 1007, 1038–50 (2012) (discussing the incentives state and local governments face that cause them to seek short-term economic gains resulting in long-term, aggregated environmental harms).

authority to regulate land use generally,[70] and subnational forests specifically, through their zoning and suite of other police powers.[71] One only has to look to recent controversies where states and other subnational units have vehemently argued against federal intrusion into forest management activities to find evidence of these dualist attitudes.[72] For example, the recent Supreme Court case *Decker v. Northwest Environmental Defense Center*[73] involved a dispute over whether private foresters were required to receive a national Pollutant Discharge Elimination System (NPDES) permit under the Clean Water Act for stormwater discharged from ditches along logging roads.[74] In an amici brief,[75] the National Governors Association, National Association of Counties, National Conference of State Legislatures, International City/County Management Association, and Council of State Governments argued that such a requirement was unlawful because, among other things, the forest management activities in question were "traditionally regulated by state and local governments under their own laws."[76] More significantly, the coalition of subnational

70. These regulations may take the form of structural zoning through the use of building height restrictions or lot setback lines, or may take the form of use zoning that designates the location of commercial, residential, agricultural, industrial, or other types of development. In the natural resource context these regulations may take the form of urban growth boundaries intended to curtail destructive urban sprawl that replaces important natural capital.

71. *See* Hudson & Rosenbloom, *supra* note 7, at 1290 ("Subnational governments in the United States, on the other hand, maintain a wide range of tools to regulate agricultural activities, particularly those related to their police power to regulate land use activities.").

72. *See* Blake Hudson, *supra* note 59, at 365 ("Though private forest management regulation, and land use regulation generally, have long been the purview of state and local regulatory authority in the United States, federal and international regulatory bodies have taken a growing interest in forest management decisions.").

73. 133 S. Ct. 1326 (2013).

74. *See id.* at 1330.

75. Brief for the National Governor's Association et al. as Amici Curiae Supporting Petitioners, Decker v. Nw. Envtl. Def. Ctr., 133 S. Ct. 1326 (2013) (Nos. 11-338, 11-347), http://www.americanbar.org/content/dam/aba/publications/supreme_court_preview/briefs/11-338_petitioneramcungaetal.authcheckdam.pdf.

76. *Id.* at 15. The amici argued:

> If an agency interprets a statute as authorizing federal intrusion into areas traditionally regulated by state and local governments, such as

government organizations noted that "[the U.S. Supreme] Court has held that the Constitution's Commerce Clause, U.S. Const. art. I, § 8, cl. 3, limits Congress' power to enact laws that 'effectually obliterate the distinction between what is national and what is local.'"[77] The *Decker* case is a particularly compelling example of state protectionism of forest management authority because it involved the regulation of activities indirectly related to forest management (water runoff) under a federal statute that regulated another resource (the Clean Water Act).[78] How much more so might state and local governments resist federal "intrusion" into direct forest management activities, such as those related to clear-cut and stand density requirements, afforestation and reforestation requirements, road building requirements, or direct forest preservation?

Ultimately, even though the federal government maintains indirect regulatory mechanisms that impact subnational forest management activities, such as the Endangered Species Act or Clean Water Act, state and local governments otherwise exercise this suite of powers almost exclusively.[79] These powers are exercised—or perhaps more importantly in the subnational forest management context, often *not* exercised—in the absence of needed minimum standards set at a higher level of government and aimed at the protection of the nation's aggregated forest capital.[80] This has exacerbated problems of urban sprawl, among other forest management threats, as courts' continued declaration that land use planning is the "quintessential state

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> water use and land use, countervailing principles of federalism come into play that limit deference to the agency's interpretation. Under these principles of federalism, Congress presumptively does not authorize federal intrusion into areas traditionally regulated by state and local governments unless it speaks clearly and unequivocally.

Id. at 16–17.

77. *Id.* at 17.

78. *See Decker*, 133 S. Ct. at 1333 (noting that the lawsuit challenged federal Clean Water Act permitting for stormwater discharged during timber extraction).

79. *See* Hudson, *supra* note 60, at 1995 n.16 (noting that state governments maintain primary responsibility to regulate land use under their police power to protect the general welfare).

80. *See* Hudson, *supra* note 69, at 1012 (noting that some states have robust forest management programs while others have some of the least rigorous standards in the world).

and local government power"[81] causes the federal government to perceive a lack of constitutional authority to set limits on the mode and expanse of local development activities that impact forest resources.[82] As a result, an ever-expanding, human-built environment rapidly replaces forests and important associated ecosystem services. As detailed below, a recent U.S. Forest Service Report highlights that forests face serious threats over the next fifty years. The southeastern states alone, where 86% of forests are privately owned, are projected to lose up to 13% of their forests due to urbanization, population growth, invasive species, and climate change by 2060.[83] While it may be conventional wisdom to consider deforestation a problem of the Amazon, Indonesia, or other developing countries, this loss of U.S. forests would be a significant blow to domestic forest resources and the services they provide as well as utilization of global forests to combat climate change.[84] Nearly 20% of yearly global carbon emissions have resulted from forest loss and degradation in recent decades.[85] The threat that the aggregated poor forest management standards of U.S. subnational governments pose for domestic forest resources and the global climate change mitigation and other ecosystem services provided by forests cause the dualistic, undynamic approach to subnational forest management to be increasingly unworkable.

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81. Rapanos v. United States, 547 U.S. 715, 738 (2006).

82. *See* Hudson & Rosenbloom, *supra* note 7, at 1278 (describing potential limits on federal authority to control certain types of resource management).

83. This is 23 million acres of forestland, or an amount equal to all of the forests in the states of Georgia or Alabama. WEAR & GREIS, *supra* note 5, at 26–35.

84. *See* Hudson, *supra* note 59, at 365–66.

85. ERIN C. MYERS, POLICIES TO REDUCE EMISSIONS FROM DEFORESTATION AND DEGRADATION (REDD) IN TROPICAL FORESTS, RESOURCES FOR THE FUTURE 6 (2007), http://www.rff.org/documents/RFF-DP-07-50.pdf.

A. The Importance of U.S. Forest Resources and the Forest Regulatory Framework

1. Importance of U.S. Forests Locally, Nationally, and Globally

Though forests may have historically been thought of as the quintessential local resource, being anchored to the land of individual property owners, the national and global importance of local forests is becoming ever more apparent.[86] Consider the variety of services provided by forests on local scales:

- a renewable source of building materials and associated jobs;
- a renewable source of paper products and associated jobs;
- clean air services that filter and trap air pollutants;
- clean water services that prevent nutrient, chemical, and other nonpoint run-off from entering waterways;
- protection of fisheries by mitigating run-off eutrophication that leads to "dead zones";
- flood control services;
- endangered and other animal species habitat;
- regulation of local ambient air temperatures in urban and rural areas during the summer;
- energy cost savings for households and businesses;
- aesthetic values;
- cultural values;
- recreational values.[87]

Yet in recent decades the role of forests in national and global well-being has become increasingly apparent, particularly the role of forests as a global climate regulator and major carbon sink or source.[88] The nearly 20% of yearly global carbon emissions resulting from forest loss and degradation over recent decades[89] is an amount greater than emitted by the global transportation

86. *See* Hudson, *supra* note 69, at 1029–30 (noting that while land use regulation has been the purview of state and local governments, new coordination among state governments is necessary given the depletion of resources).

87. S*ee* UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE, Ecosystem Services, http://www.fs.fed.us/ecosystemservices/ (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

88. *See* Hudson & Rosenbloom, *supra* note 7, 1275 (noting that resources that act as carbon sinks are crucial to regulating climate change).

89. MYERS, *supra* note 85, at 5.

sector each year.[90] As a result, mechanisms to protect forests globally are on the agenda of both international climate negotiations and negotiations related to establishing a global sustainable forest management regime.[91] Not only does forest destruction constitute a substantial source of atmospheric carbon, but one recent U.S. Forest Service report found that one-third of global carbon emissions are absorbed by forests each year, making forests the most significant terrestrial carbon sink on the planet.[92] As a result, forest preservation has a multiplied effect on greenhouse gas regulation, and, correspondingly, forest destruction doubly amplifies concentrations of carbon in the atmosphere as it constitutes both a source of carbon and the loss of a significant carbon sink.

The United States alone contains nearly 8% of the world's total forest cover.[93] While deforestation is commonly considered a problem of developing nations like Brazil or Indonesia, the

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90. *Id.* at 4.

91. *See* MCDERMOTT ET AL., *supra* note 11, at 4–6 ("Most recently, realization of the significance of climate change impacts of greenhouse gas emissions from deforestation and forest degradation has brought renewed impetus to efforts to conserve and better manage forests globally."); *see also* A. Angelsen, *REDD Models and Baselines*, 10 INT'L FORESTRY REV. 465 (2008) (discussing the possibility of setting national emissions standards); T. Johns et al., *A Three-Fund Approach to Incorporating Government, Public and Private Forest Stewards Into a REDD Funding Mechanism*, 10 INT'L FORESTRY REV. 458, 459 (2008) (arguing that international efforts to prevent deforestation should be sufficiently flexible to allow for regional differences across countries); A. Karsenty et al., *Summary of the Proceedings of the International Workshop "The International Regime, Avoided Deforestation and the Evolution of Public and Private Policies Towards Forests in Developing Countries" Held in Paris, 21–23rd November 2007*, 10 INT'L FORESTRY REV. 424, 424 (2008) (discussing international efforts to address deforestation in developing nations); K. Levin et al., *The Climate Regime as Global Forest Governance: Can Reduced Emissions from Deforestation and Forest Degradation (REDD) Initiatives Pass a 'Dual Effectiveness' Test?*, 10 INT'L FORESTRY REV. 538, 539 (2008) (advocating for a results-based test for determining the effectiveness of global deforestation initiatives).

92. Press Release, United States Forest Service, U.S. Forest Service Finds Global Forests Absorb One-Third of Carbon Emissions Annually (July 14, 2011), *available at* http://www.fs.fed.us/news/2011/releases/07/carbon.shtml (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

93. JACEK P. SIRY ET AL., XIII WORLD FORESTRY CONGRESS, GLOBAL FOREST OWNERSHIP: IMPLICATIONS FOR FOREST PRODUCTION, MANAGEMENT, AND PROTECTION 3 tbl.1 (2009) (noting that the United States maintains 302 million hectares of the world's approximately 4 billion hectares of forest).

projected loss of 13% of forest cover in the Southeast would be a significant blow to the carbon sequestration capabilities of forests domestically and globally. Furthermore, this number does not include potential deforestation outcomes in other parts of the United States due to the same drivers of urbanization and climate change.[94] As a result, the total amount of U.S. deforestation may very well be higher, though reforestation in other areas may mitigate or even outpace some of that deforestation.

The significance of U.S. forest loss is not only calculated in sheer scientific terms of lost carbon sink potential. The political message that U.S. deforestation could send to the rest of the world would do great damage to the overall goal of forest preservation and the slowing of deforestation in the developing world—that is: "Stop cutting down your forests, even though we will continue to cut ours." Furthermore, as described below, one of the primary concerns among scientists is that threats to U.S. forests will make it virtually impossible even to stabilize national forest stocks, much less increase forest stocks to mitigate the worst case climate change impacts.

2. U.S. Forest Policy Regulatory Framework and Policy Options

The federal government maintains regulatory inputs into the approximately 35% of forestland that it owns, while state governments are currently responsible for regulating the remaining 60% of forests owned by private individuals and 5% owned by subnational governments.[95] As depicted in Figure 1 below, and as described in greater detail in Part III.B, federal and subnational forest policy options in the United States can be situated along a spectrum, regarding both the level of forest policy stringency and the range of forest values protected. The scope of forest management standards can range from virtually nonexistent (in many states), to very basic (focusing primarily on

94. *See* MYERS, *supra* note 85, at 6–8.

95. U.N. ENV'T PROGRAMME, GLOBAL ENVIRONMENT OUTLOOK 3: PAST, PRESENT AND FUTURE PERSPECTIVES 110 (2002), http://www.unep.org/geo/GEO3/english/pdfs/chapter2-3_forests.pdf.

timber extraction and fundamental silvicultural[96] practices), to those that seek to protect the full range of values provided by forests, including climate mitigation values. Forest management standard stringency might range from voluntary guidelines, to incentive-based programs, to prescriptive regulation.

Hence, on one end of the spectrum is a policy of maintaining no standards for many or all categories of forest management, neither through direct regulation nor incentives and information.[97] Next are voluntary procedural or substantive forest guidelines, whereby governments provide forest owners with information regarding suggested procedures (such as management plans or environmental impact assessment methods) or suggested substantive standards (which may range from basic standards to standards related to the full scope of forest values).[98] Many states, for example, maintain only voluntary best management practice guidelines on forest management.[99] Next along the spectrum are programs aimed at promoting, through monetary incentives or otherwise, voluntary forest management efforts that capture a range of values, from the very basic, timber extraction-centric forest standards to more robust standards related to carbon sequestration and forest ecosystem service functions, including biodiversity.[100]

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96. Silviculture is "a branch of forestry dealing with the development and care of forests." *Silviculture Definition*, MERRIAM–WEBSTER'S COLLEGIATE DICTIONARY 1161 (11th ed. 2011).

97. *See* Hudson, *supra* note 69, at 1013 (detailing that private forest managers in some states can use forest capital unchecked because of low forest management standards).

98. *See* Hudson, *supra* note 59, at 365 (describing an example of Alabama's suggested best management practices).

99. JAN G. LAITOS ET AL., NATURAL RESOURCES LAW 849 (1st ed. 2006) ("The laws related to timber management vary depending on whether it takes place on private, state, tribal, or federal lands . . . . [s]tate timber laws regulate the forestry industry by requiring practices designed to minimize water pollution, soil erosion, and fire dangers, and by encouraging or requiring deforestation."). Yet most states do not place legally binding forest management standards upon private forest managers. As described by Professor Rose, "[a]lthough a few states have laws that regulate forest practices on private land, most rely upon *voluntary* best management practices and technical assistance." Gerald A. Rose et al., *Forest Resources Decision-Making in the U.S.*, *in* THE POLITICS OF DECENTRALIZATION: FORESTS, PEOPLE AND POWER 238, 238 (Carol J. Pierce Colfer & Doris Capistrano eds., 2005).

100. *See* JOHNSON, *supra* note 13, at 16 (describing financial incentives and

Further along the spectrum are prescriptive "basic" forest management regulatory standards that are fundamental for good silviculture. Such standards primarily focus on maximizing value from timber extraction, though in certain areas of the forest, like watersheds, they also provide co-benefits like watershed protection and erosion control. These standards include (but are not limited to) five primary standards. First, riparian streamside buffer zones in forested watersheds prevent erosion that might interfere with timber production, prevent sedimentation of waterways, provide wildlife corridors, regulate water temperatures, and protect aquatic habitat.[101] Second, forest road standards address the problems associated with road building, described as "one of the 'main causes [of] the environmental degradation of most forest regions.'"[102] Forest roads provide greater access for resource extraction and potential over-exploitation, cause erosion that damages watersheds, and lead to fragmentation of forest landscapes and habitat.[103] As a result, decommissioning roads, limiting their location, reducing their extent, and placing limitations on culvert size at stream crossings are important forest management objectives. Third, clearcut standards aim to address "perhaps the most controversial forest harvesting practice"—clearcutting, which has been criticized by ecologists, civil society, and forest market scholars alike.[104] Clearcutting effectively involves a complete removal and replacement of the forest, which can not only damage long-term forest productivity but can also interfere with a variety of other ecological processes.[105] The removal of so much

technical assistance used in federal programs).

101. *See* MCDERMOTT ET AL., *supra* note 11, at 15 (describing the benefits of riparian buffer zones).

102. *Id.* at 16 (quoting Raffaele Spinelli & Enrico Marchi, *Food and Agriculture Organization of the United Nations, A Literature Review of the Environmental Impacts of Forest Road Construction*, *in* PROCEEDINGS OF THE SEMINAR ON ENVIRONMENTALLY SOUND FOREST ROADS AND WOOD TRANSPORT (1996), *available at* http://www.fao.org/docrep/X0622E/x0622e0p.htm#TopOfPage (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

103. *See* MCDERMOTT ET AL., *supra* note 11, at 16–17 (describing the exploitation that forest roads cause).

104. *Id*. at 18.

105. *See, e.g.,* NATURAL RESOURCES DEFENSE COUNCIL, *What is Clearcutting*,

stored carbon, as well as removal of the carbon sequestering potential of the forest, has serious consequences for regulating greenhouse gases. Limiting clearcut size can avoid these negative effects. The final two forest management standards are reforestation standards, which specify time frames for replanting or achieving stocking levels, and annual allowable cut standards, which implement cut limits based on sustained yield.[106] These standards ensure that no more of the forest resource is harvested than is sustainable.[107]

Moving along the spectrum beyond basic forest management standards are carbon sequestration-centric standards that are inclusive of protections provided by basic standards, but which are also aimed at maximizing carbon potential of forests (i.e., more robust clear-cutting prohibitions or stand density requirements than basic standards). Though these standards capture more values than basic standards, in their efforts to maximize forest carbon they may do so at the expense of other forest values, such as biodiversity and overall ecosystem functionality. Indeed, one concern in the climate change context is the replacement of ecologically functional and richly biodiverse forests with monoculture plantations of forests aimed at sequestering as much carbon as possible over short time scales.[108]

Last on the spectrum are ecosystem-centric forest standards that focus on ecosystem functionality and a wide range of other values, such as protection of biodiversity, species habitat, ecosystems, genetic resources, recreational and cultural values, and the provision of water purification, flood prevention, air

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http://www.nrdc.org/land/forests/fcut.asp (last visited Sept. 24, 2014) (describing the impacts of removal of forest carbon sinks) (on file with the Washington and Lee Law Review).

106. *See* MCDERMOTT ET AL., *supra* note 11, at 19 (describing reforestation standards).

107. *See id*. at 19–20.

108. *See* Raquel Nunez Mutter & Winnie Overbeek, *The Great Lie: Monoculture Trees as Forests*, U.N. RESEARCH INST. FOR SOC. DEV. (Oct. 20, 2011), http://www.unrisd.org/80256B3C005BE6B5/search/531DAFFB8B319F69C125792E00499ED1?OpenDocument (last visited Sept. 24, 2014) (noting that monocultures are highly susceptible to diseases and drought) (on file with the Washington and Lee Law Review); *see also* Kristin B. Hulvey et al., *Benefits of Tree Mixes in Carbon Plantings*, 3 NATURE CLIMATE CHANGE 869–74 (2013) (showing empirically that diversity among tree species can increase carbon sequestration).

quality regulation, and even certain timber commodity services.[109] These standards basically amount to forest preservation standards, while allowing selective cutting or controlled burns to, for example, prevent the buildup of fuel that may later result in a catastrophic fire.[110] Some degree of management may also be necessary because it is unclear whether a pure form of forest preservation maximizes forest carbon to the greatest degree possible if it occurs to such a degree that forest "succession"[111] or natural fire events cease and the forest becomes carbon saturated and unable to sequester additional amounts of carbon dioxide. It was long thought that saturation may exist in old-growth forests where human interference with natural processes (like fire) prevents regeneration of new, productive forest ecosystems that sequester even greater amounts of carbon from the atmosphere.[112] Recently, however, scientific studies shed doubt on the idea that older, pristinely preserved forests are less productive at sequestering carbon.[113] As a result, it may very well be that simple forest preservation would maximize both carbon sequestration capabilities and capture the many other ecological values provided by forests. Regardless, even with pure,

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109. *See* RASBAND ET AL., *supra* note 2, at 1206–09; BASTIAAN LOUMAN ET AL., *Forest Ecosystem Services: A Cornerstone for Human Well-Being*, *in* 22 INT'L UNION OF FOREST RES. ORGS. WORLD SERIES, ADAPTATION OF FORESTS AND PEOPLE TO CLIMATE CHANGE—A GLOBAL ASSESSMENT REPORT 15, 16–20 (Risto Seppälä et al. eds., 2009) *available at* http://www.iufro.org/science/gfep/embargoed-release/download-by-chapter/ (follow "Download chapter 1" hyperlink) (last visited Sept. 24, 2014) (providing examples of ecosystem-centric forest standards) (on file with the Washington and Lee Law Review).

110. *See* LOUMAN ET AL., *supra* note 109, at 20 (describing the adaptive capabilities of forests).

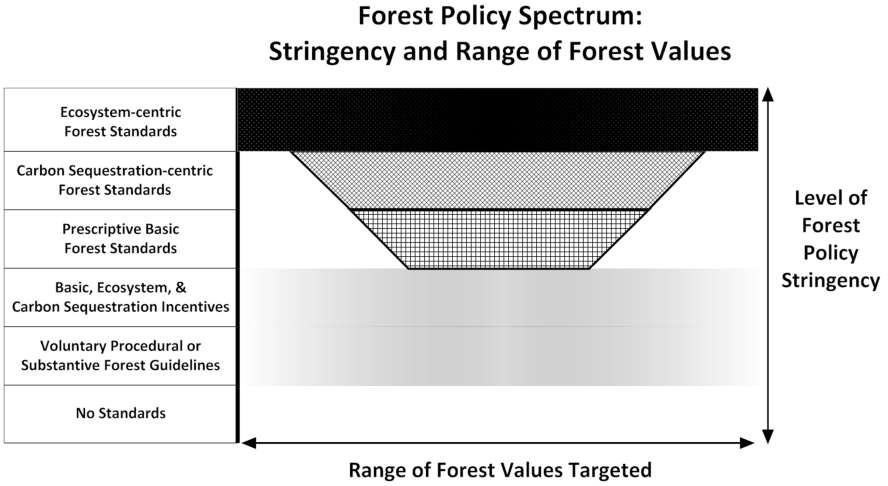
111. Brian Finegan, *Forest Succession,* 321 NATURE 109 (Nature Publishing Group 1984), http://www.planta.cn/forum/files_planta/finegan1_108.pdf.

112. Though, of course, carbon emissions from forest fires must be weighed against a renewed cycle of succession.

113. Bettina Boxall, *Big, Old Trees Keep Growing and Capturing Carbon, Study Finds*, LOS ANGELES TIMES (Jan. 15, 2014), *available at* http://www.latimes.com/science/sciencenow/la-sci-sn-old-trees-carbon-capture-20140115,0,5642959.story#ixzz2s13Ox9kK (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review); *see also* N.L. Stephenson et al., *Rate of Tree Carbon Accumulation Increases Continuously With Tree Size*, NATURE (Jan. 15, 2014), *available at* http://www.nature.com/nature/journal/vaop/ncurrent/full/nature12914.html (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

ecosystem-centric forest preservation standards it seems that some form of forest management is needed to balance the full range of forest values, from carbon sequestration, to timber commodities, to biodiversity and other resource protections. In addition, not all forest ecosystems are the same, and so the broadest, ecosystem-centric forest preservation standards in one region of the country may look very different from those in another part of the country.

Figure 1



Having established the basic regulatory framework and policy options for U.S. forests, including the primary regulators of forests at different scales and the range and stringency of management standards they might seek to utilize, this Article now turns to a discussion of how the implementation of these standards is fragmented in a dualistic way between federal and state governments, with the federal government only maintaining inputs into federal forestlands, and state and local governments left alone to decide the fate of the remaining 65% of the nation's forests. State and local governments, in turn, are grossly inconsistent regarding the quality and stringency of their forest policies—if they even maintain standards at all. This fragmented federalism in the forestry arena will likely facilitate the grave threats projected to affect U.S. forest resources in the coming decades.

B. The Threats to U.S. Forests: A Southeastern Case Study

As highlighted above, the federal government maintains regulatory authority over the approximately 35% of forests it owns while state governments are responsible for regulating the nearly 65% of forests owned by private individuals and subnational governments.[114] While U.S. federal government forest policies are quite consistent on the 35% of forestland it owns, state forest policies in the United States are grossly inconsistent, with some states maintaining stringent basic forest management standards, and others maintaining none at all. Subnational forest management discrepancies have stark ramifications for not only domestic forest resources but for the global battle against climate change—especially if the United States sought to establish a national policy to harness domestic forests as carbon sinks.

McDermott et al. provided a framework for assessing and comparing the domestic forest policies of governments around the globe.[115] The study identified four "styles" of forest policy regulation:

1. Voluntary Procedural: *encourage* the voluntary development of forest management processes or plans, but do not require such plans to be developed.[116]
2. Mandatory Procedural: *require* the development of forest management plans or procedures.[117]
3. Voluntary Substantive: specific forest practice guidelines exist, but they are not binding on forest managers.[118]
4. Mandatory Substantive: establish "mandatory, on-the-ground requirements or restrictions, such as a rule that no timber harvest may occur within *x*

114. U.N. ENV'T PROGRAMME, GLOBAL ENVIRONMENT OUTLOOK 3: PAST, PRESENT AND FUTURE PERSPECTIVES 110 (2002), *available at* http://www.unep.org/geo/GEO3/english/pdf.htm (follow "Forests" hyperlink) (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

115. *See* MCDERMOTT ET AL., *supra* note 11, at 7–11 (discussing frameworks for comparative forest policy analysis).

116. *Id.* at 10.

117. *Id.*

118. *Id.*

> meters of a river of *y* width."[119] These rules are, of course, enforceable at law.

McDermott et al. matched one of these four "styles" of forest policy regulation in each national or subnational government studied with five types of forest policy standards. For each standard, the authors assigned an "indicator" used to classify the policy approach as one of the four "styles" of regulation. The type of standard and associated indicators are as follows:

1. Protection of riparian zones in forested watersheds (indicator: riparian streamside buffer zone rules).
2. Protection from environmental damage caused by roads (indicator: rules for culvert size at stream crossings and road decommissioning).
3. Protection from clearcutting damage (indicator: clearcut size limits or other relevant cutting rules).
4. Reforestation (indicator: requirements for reforestation, including specified time frames and stocking levels).
5. Limitations on annual allowable cut (indicator: cut limits based on sustained yield).[120]

As discussed in Part III.A, the five forest policy standards assessed by McDermott et al. are the most fundamental of forest management and silvicultural standards, and, of course, a variety of additional standards can build upon this baseline to ensure that forests are managed for the full suite of services they provide.[121] Even so, these five basic standards provide a variety of important protections for forest resources, and the presence or absence of policies aimed at basic forest standards acts as an indicator for the likelihood of more holistic policies at present and in the future within specific jurisdictions.

McDermott et al. found dramatic differences between the "styles" of riparian buffer zone, road, clearcut, reforestation, and annual allowable cut forest policies applied by the U.S. states.[122] Governments are ranked based on an average of the "style"

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119. *Id.*

120. *Id.* at 15–19.

121. *See* RASBAND ET AL., *supra* note 2, at 1206–09; LOUMAN ET AL., *supra* note 109, at 16–20.

122. *See* MCDERMOTT ET AL., *supra* note 11, at 327 tbl.10.7.

utilized for each of the five indicators. Mandatory approaches place governments nearer to "10" on the scale (with mandatory substantive the most stringent) and voluntary or no policy places governments nearer to "0."

The state of California and the U.S. Forest Service each score a "9" on the scale, maintaining very high forest policy standards.[123] The U.S. state of Washington scores a high "8" on the scale,[124] while Oregon scores a "7," Idaho scores a "5," and Alaska scores a "4."[125] Lowest on the scale are the states of Montana with a "2.5," Louisiana and Virginia with a "2," and the entire rest of the southeastern United States—Alabama, Arkansas, Georgia, Mississippi, North Carolina, South Carolina, and Texas with a score of "1."[126] To provide context for the southeastern states' level of forest policy stringency, consider that developing countries average a "6.7" on the scale while nine southeastern states average a "1.2," maintaining entirely voluntary "guidelines" or no standards at all.[127]

As these rankings indicate, while some U.S. states maintain high forest management standards, others, particularly in the Southeast, maintain no enforceable standards at all.[128] The

123. *Id.*

124. *Id.*

125. *Id.*

126. *Id.*

127. To be clear, "it cannot be assumed that regions with higher levels of regulation are actually performing better than those with lesser levels." *Id.* at 350. A lack of institutional enforcement capacity and other issues of implementation may render forest standards on paper far less efficacious than voluntary standards in countries with better management practices on the ground. *See id.* at 10 (discussing four styles of forest policy regulation: voluntary procedural, mandatory procedural, voluntary substantive, and mandatory substantive). Yet, maintaining legal standards on paper within countries that respect the rule of law and do maintain institutional enforcement capacity remains important, as it provides some environmentally sound standards to which citizens can legally hold the government and their fellow citizenry accountable, even if other voluntary programs or cooperative arrangements are made to achieve better compliance and to take advantage of boots on the ground. *See id.* at 342 (noting that there is a "demand for prescriptive regulations to ensure high environmental performance from forest managers" around the world).

128. *See id.* at 327 tbl.10.7. These lax standards have implications for other resources beyond forests and fail to facilitate the protection of forest habitat critical to species protection. *See id.* at 82. Indeed, there is a sharp contrast between the regulatory standards for forests in the Southeast and the high

implications of these lax standards in the southeastern United States for both domestic forest health and global climate change mitigation are profound, providing a compelling example of how dynamic changes in our understanding of the nature of a resource (here, a carbon sink needed to combat climate change) demonstrates a need to move beyond dualist notions of federalism in the case of subnational forest regulation.

The implications of a failure to transition to dynamic federalism in U.S. forest policy are perhaps best evidenced by the recent U.S. Forest Service's Southern Forests Futures Project Summary Report (Futures Report).[129] The Futures Report highlighted in dramatic fashion the pressure that southeastern U.S. forests will face in the coming decades. The project focused on four factors that would "define the South's future forests,"[130] and include: population growth, climate change,[131] timber markets, and invasive species.[132] Urban development, in particular, is "forecasted to result in forest losses, increased carbon emissions, and stress to other forest resources,"[133] including degradation of a variety of water ecosystem services

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amount of biodiversity in the region. *See id.* at 90. Alabama, for example—the state that "[avoids] environmental problems through voluntary application of preventative techniques," *id.* at 82—also happens to have the third highest number of listed threatened or endangered species under the ESA of any state in the United States, only trailing Hawaii and California. U.S. FISH AND WILDLIFE SERVICE, SPECIES REPORTS, http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrence.jsp (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review); *see also* MCDERMOTT ET AL., *supra* note 11, at 94 fig.3.5 (showing number of endangered and threatened animal species in Canadian provinces and U.S. states).

129. *See* WEAR & GREIS, *supra* note 5, at 4 (studying in the report thirteen state forest policies, including: Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Kentucky, Mississippi, Arkansas, Louisiana, Oklahoma and Texas).

130. *Id.*

131. *See id.* at 27 (noting that average annual temperatures are expected to increase in the region 2.5 to 3.5 degrees Celsius by 2060).

132. *See id.* at 4 (describing the factors that will define the South's future forests).

133. *Id.* Since the 1970s total forest area has been stable, but this stability is a result of agricultural lands being reforested at the same rate that urbanization has reduced forest cover. *Id.* at 15. While urbanization is expected to increase at even higher rates, conversion of agricultural lands to forests is not expected to continue. *Id.* at 31.

such as flood control and water filtration—even to the point of threatening public health.[134] Population pressures in the Southeast would "result[] in declines in forest cover, increases in demand for ecosystem service[s], and restrictions that complicate the ability to manage forests for the full spectrum of uses."[135] Importantly, both population and economic growth have increased at higher rates in the Southeast than anywhere else in the United States,[136] "with the resulting urbanization steadily consuming forests and other rural lands."[137] The Futures Report projected that 30 to 43 million acres of southern land will succumb to urban development by 2060, while total forest losses could be as high as 33 million acres, or approximately 13% of all forestland in the South.[138] This amount of deforestation is roughly equivalent to cutting down all the forest in the states of Georgia or Alabama.[139] The negative repercussions of these projections go beyond the environment as the forest industry in the South could also be damaged.[140] The southern timber

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134. The report notes that:

> [s]trong population growth and associated urbanization has increased demand for water and challenged water availability in several areas . . . . Conversion of forests to urban and other land uses has resulted in a loss of natural buffering, increasing water pollution loads, elevating peak flows, and reducing base flows in affected watersheds. The consequences are more frequent and more severe flooding, lower stream flows during drought conditions, and water quality that is degraded—sometimes to the point of threatening public health . . . . [T]he link between conversion of forest land to urban uses and degraded water quality in affected watersheds is well accepted.

Id. at 24.

135. *Id.* at 26. From 1970 to 2010, population in the South grew by 88%, and disposable personal income more than doubled. *Id.* at 6 fig.2. Further, from 1990 to 2008, population in the South grew at a rate approximately one-third faster than the nation as a whole. *Id.* at 71. These pressures do not appear to show any sign of letting up. Population in the South is expected to grow yet another 40% to 60% from 2010 to 2060. *Id.* at 12–13.

136. *See id.* at 6 fig.2, 71 (showing that population in the South grew by 88% from 1970 to 2010 and increased at a rate around one-third faster than the nation as a whole from 1990 to 2008).

137. *Id.* at 5.

138. *Id.* at 35.

139. *Id.* at 31.

140. *See id.* at 62 (noting that the forest industry land base may become less stable, despite its recent status as a predictable component of the southern

production sector contributed more than 1 million jobs and $51 billion in employee compensation in 2009.[141] In fact, "southern forests are the most intensively managed forests in the [United States]."[142] A majority of the United States' lumber is harvested from southern forests,[143] and "since 1986, if the South were compared with any other country, none would produce more timber than this one region of the United States."[144]

Forest losses due to rapid urbanization also profoundly and negatively impact the carbon storage capacity of southern forests.[145] The amount of carbon sequestered in southern forests and their soils is projected to reach a maximum in 2020,[146] and then decline by as much as 5% by 2060.[147] Such a decline in carbon storage capacity "would be a challenge for carbon mitigation policies, presenting a dynamic baseline where a first order policy objective would be to *stabilize* rather than expand forest carbon stocks."[148] So even if forest management-driven climate change mitigation policies were to be enacted by southeastern states, southeastern forests would not only be unable to sequester additional amounts of carbon needed to fight climate change, but it would be exceedingly difficult to prevent forest carbon stocks from dropping even further and becoming an even greater source of atmospheric carbon.[149] Furthermore, given the lack of political will to formulate important and fundamental forest management standards in the Southeast, it is hard to imagine prescriptive climate mitigation policies even being put

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forest landscape).

141. *Id.* at 17.

142. *Id.* at 29.

143. *Id.* at 5.

144. *Id.* at 17.

145. *Id.* at 34.

146. *Id.*

147. Robert Hugget et al., *Forecasts of Forest Conditions*, *in* THE SOUTHERN FOREST FUTURES PROJECT, TECHNICAL REPORT 17 (2011), *available at* http://www.srs.fs.usda.gov/futures/reports/draft/Frame.htm (follow "Chapter 5" hyperlink) (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

148. WEAR & GREIS, *supra* note 5, at 34 (emphasis added).

149. *See id.* ("The potential decline in carbon storage would be a challenge for carbon mitigation policies, presenting a dynamic baseline where a first order policy objective would be to stabilize rather than expand forest carbon stocks.").

into place by southeastern states in the near future. Both the implementation and success of such policies would be undermined because countervailing land use policies promoting and facilitating rapid urbanization are also widespread.

Given the southeastern United States' governance philosophy regarding forests and land use and the high percentage of forests privately owned in the Southeast, a more dynamic regulatory approach for subnational forest management is needed. This approach would involve the federal government maintaining constitutional authority to coordinate subnational forest policy with the implementation of minimum forest management standards. In the absence of a dramatic shift in governance culture in the Southeast, and a voluntary adoption of stronger forest policies by individual states, deforestation of the region is likely to ensue unabated in the absence of a national policy.[150] Alabama's position on voluntary "best management practices" is emblematic of this governance philosophy.[151] The Alabama Forestry Commission declares that it is the "lead agency for forestry in Alabama" but that it is "not an environmental regulatory or enforcement agency" and that it "[avoids] environmental problems through voluntary application of preventative techniques."[152] Yet, as evidenced by the Futures Report's projected loss of up to 13% of the region's forests over the next fifty years, when given the choice between preserving a forest or managing it for the full range of ecological values, and cutting it down in the name of economic development and urbanization, voluntary choices often do not lead to "preventative techniques" that benefit forests.[153] Even so, most southeastern state administrative agencies operate similarly as "[t]he implementation of BMPs [Best Management Practices] . . .

150. *See* Hudson, *supra* note 69, at 1010 ("[I]f a higher level of government does not maintain the constitutional authority to coordinate subnational action, then each government's individualized 'rationality' may result in overconsumption of natural capital . . . .").

151. *See* MCDERMOTT ET AL., *supra* note 11, at 82 (detailing the contours of Alabama's hands-off policy toward forest management).

152. *Id.*

153. *See* WEAR & GREIS, *supra* note 5, at 35 (describing the threats to forestland in the South).

generally involves agencies not directly responsible for environmental regulation."[154]

Constitutionally dual federalist forest policy is nothing unique to the United States. In Canada, for example, dualism is quite clear from the text of the Canadian Constitution, and therefore the Canadian federal government is even more restricted that the U.S. federal government in the area of subnational forest management policy.[155] Canada's provinces actually own 77% of the nation's vast forest resources and also maintain constitutional authority to regulate directly the 7% of forests in private ownership.[156] Canada's constitution actually contains explicit provisions relegating forest policy to the provinces for non-federally-owned forests.[157] These provisions have made it virtually impossible for the Canadian federal government to get any foothold whatsoever on subnational forest policy.[158] Even so, in Canada the most fundamental of subnational forest policies, as described by McDermott et al., remain fairly robust because of provincial ownership of forests and the fact that the provinces are negotiating with a handful of industry players for the management of forests in what has been described as a "quasi-corporatist" negotiations.[159]

Contrast the situation in Canada with that in the U.S. South. In the southeastern United States, rather than having a few primary industrial players negotiating with the government regarding the extraction of the government's own resources, we see forest industries and a vast array of nonindustrial private

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154. MCDERMOTT ET AL., *supra* note 11, at 82.

155. *See* Hudson, *supra* note 59, at 371 n.26 (noting that Canada's Constitution Act of 1867 grants the provincial governments exclusive responsibility for forest management).

156. *See* CAN. COUNSEL OF FOREST MINISTERS, SUSTAINABLE FOREST MANAGEMENT IN CANADA 4, (2010), http://www.sfmcanada.org/images/Publications/EN/Sustainable_Management_Policies_EN.pdf (detailing that most of Canada's forests are owned by the provinces).

157. *See* Hudson, *supra* note 59, at 371 n.26 ("In fact, scholars have noted that the 1982 amendments to Canada's Constitution placed it 'beyond dispute that the provinces are primarily responsible for forest management.'").

158. *See id.* (noting the issues the Canadian federal government faces over forest policy).

159. Blake Hudson, *Fail-safe Federalism and Climate Change: The Case of U.S. and Canadian Forest Policy*, 44 CONN. L. REV. 925, 960 (2012).

forest owners managing privately owned forestlands, largely absent of inputs from governments who are hesitant to place restrictions on private property rights. Eighty-six percent of southern forests are privately owned, and forest ownership is highly fragmented. While 60% of privately owned forests are 100 acres or more, 59% of all private forest owners own less than 9 acres of forestland,[160] and family forest holdings in the region average only 29 acres in size.[161] As a result, "a large number of individuals may choose to act 'rationally' regarding the appropriation of forest resources, maximizing personal gain to the detriment of the subnational, national, and global resource base—either through poor forest management practices or through replacement of forest resources with human-made capital in the form of urbanization."[162] The high number of private property owners in the southeast correlates strongly with the low level of forest policy stringency adopted by subnational governments there. In the West, where the proportion of public forests is far greater, forest policy is far more stringent. So, for example, California, Washington, Oregon, Idaho, and Alaska maintain an average 67% of forests in public ownership[163] and in turn maintain far more stringent forest policy standards for both public and private forests (a "6.7" average) than do states in the southeastern United States (a "1.2" average), with its 86% of privately owned forests.[164] McDermott et al. call this a forest policy "spillover effect," where proximity to public forests, which tend to be managed more stringently, spills over into private forest management policy.[165] It seems that the United States Forest Service's "9" score on the forest policy ranking does seem to have spilled over into western forest policy in a way not seen in

160. WEAR & GRIES, *supra* note 5, at 62.

161. *Id*.

162. Hudson, *supra* note 159, at 964; *see also* Hudson, *supra* note 69, at 1013.

163. MCDERMOTT ET AL., *supra* note 11, at 80 tbl.3.3.

164. WEAR & GREIS, *supra* note 5, at 58. The 86% of forests in the South that are privately owned account for almost the entire amount of timber harvested in the south. *Id.*

165. *See* MCDERMOTT ET AL., *supra* note 11, at 346 (describing the spillover effect).

the Southeast.[166] This comes as no real surprise considering that 92% of federally owned land is located in the western United States, contrasted with less than 5% in the South.[167] Southeastern states,

> simply do[] not maintain the critical mass of publicly owned forests that would help facilitate a spillover effect, as again, eighty-six percent of forests are privately owned. Though other factors, such as overall governance culture and the limited administrative capacity of southeastern governments, may also contribute to the region's lax standards, it seems that the lack of a spillover effect further exacerbates continuation of the status quo.[168]

Ultimately, southeastern states' exercise forest policy discretion allows them to avoid the establishment of basic, fundamental forest management standards, much less craft standards meant to curb urban sprawl and the loss of 13% of southeastern forests over the next fifty years. Thus,

> setting the stage for a tragedy of the commons in the forest policy arena, as state governments maximize their own citizens' use of forest resources in their jurisdictions to the detriment of a forest base defined more broadly by national boundaries and that takes into account the value of forests across and beyond subnational boundaries.[169]

If forest policy regulation were legally and politically dynamic, then these threats might be more readily addressed. But as discussed in the next subpart, the status of U.S. forest policy as being legally and politically dual creates an institutional hurdle that only exacerbates these threats to U.S. forests.

C. U.S. Forest Federalism: Legally and Politically Dual

Given the policy options that might be taken at the federal and state levels to better manage important forest resources and avoid the threats to U.S. forests in coming decades, it is

166. *See id.* (noting that higher public land regulations contributed to similarly high private land regulations).

167. WEAR & GREIS, *supra* note 5, at 71.

168. Hudson, *supra* note 159, at 966.

169. *Id.* at 962.

important to analyze the institutional drivers that currently impede a much-needed dynamic federalist regulatory approach to managing U.S. forest resources. To that end, this subpart briefly describes the constitutional status of regulatory authority over subnational forests and how the current federal programs aimed at subnational forests, limited in scope and voluntary in nature, simply are not enough to forestall the major threats to the nation's forest resources.

1. The Constitution and Jurisprudence on Subnational Forests

The U.S. Constitution provides no explicit constitutional authority for either the federal government or the states to regulate the 65% of U.S. forests in either private or state ownership.[170] As a result, subnational forest management regulation has long been considered a role reserved for the state governments under the Tenth Amendment of the Constitution, undertaken pursuant to state and local authority to regulate land use.[171] States maintain the responsibility of regulating land use under their authority to exercise the "police power" to protect the "general welfare."[172] The Tenth Amendment reserves powers not constitutionally granted to the federal government for the states and places limits on Congress's regulatory authority "in traditional areas of state and local authority, such as land use."[173] Land use regulation "has always been a creature of state and local law."[174]

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170. *See* Hudson, *supra* note 69, at 1012.

171. *See id.* (describing the traditional police power states and localities maintain to regulate land use).

172. Mugler v. Kansas, 123 U.S. 623, 646–47 (1887).

173. James R. May, *Constitutional Law and the Future of Natural Resource Protection*, *in* THE EVOLUTION OF NATURAL RESOURCES LAW AND POLICY 124, 132 (Lawrence J. MacDonnell & Sarah F. Bates eds., 2010) (internal quotation marks omitted). Other scholars have noted that "[t]he weight of legal and political opinion holds that this allocation of power in [the United States] leaves the states in charge of regulating how private land is used." JOHN R. NOLON ET AL., CASES AND MATERIALS ON LAND USE AND COMMUNITY DEVELOPMENT 17 (7th ed. 2008).

174. Marci A. Hamilton, *Federalism and the Public Good: The True Story Behind the Religious Land Use and Institutionalized Persons Act*, 78 IND. L.J. 311, 335 (2003).

Euclid v. Ambler Realty[175] has been described as a "sweeping paean to the supremacy of state regulation over private property,"[176] and the U.S. Supreme Court itself has recognized "the States' traditional and primary power over land . . . use,"[177] and that "[r]egulation of land use . . . is a *quintessential* state and local power."[178] Regarding subnational forest management more specifically, scholars have recognized that "[u]nder the US Constitution, the federal government has limited authority and responsibility; all other powers are reserved for the states. Forestland management and use was one such reserved power."[179]

The historical categorization of private forest standard setting within the genre of land use planning more generally has resulted in a federalism landscape for U.S. forest policy that is legally and politically dualistic. Unlike virtually all other categories of natural resources, where the federal government maintains at least some prescriptive regulatory foothold, the federal government has never before claimed direct regulatory authority over the 65% of U.S. forests that are subnationally owned. This is despite the fact that, as described in the previous Part, subnational forest management policies are grossly inconsistent across the United States, and in a number of states

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175. 272 U.S. 365 (1926).

176. PAUL GOLDSTEIN & BARTON H. THOMPSON, JR., PROPERTY LAW: OWNERSHIP, USE AND CONSERVATION 967 (2006).

177. Solid Waste Agency of N. Cook Cnty. v. Army Corps of Eng'rs, 531 U.S. 159, 174 (2001) ("[R]egulation of land use [is] a function traditionally performed by local governments.") (citing Hess v. Port Auth. Trans-Hudson Corp., 513 U.S. 30, 44 (1994)).

178. Rapanos v. United States, 547 U.S. 715, 738 (2006) (emphasis added); *see also* FERC v. Mississippi, 456 U.S. 742, 768 n.30 (1982) ("[R]egulation of land use is perhaps *the quintessential* state activity.") (emphasis added).

179. Rose et al., *supra* note 99, at 238–39; *see also* LAITOS, *supra* note 99 ("The laws related to timber management vary depending on whether it takes place on private, state, tribal, or federal lands . . . [s]tate timber laws regulate the forestry industry by requiring practices designed to minimize water pollution, soil erosion, and fire dangers, and by encouraging or requiring deforestation."). Despite maintaining the regulatory authority to do so, most states do not place legally binding forest management standards upon private forest managers. As noted by scholars, "[a]lthough a few states have laws that regulate forest practices on private land, most rely upon *voluntary* best management practices and technical assistance." Rose, *supra*, at 238 (emphasis added).

forest management decisions are made at the complete whim of individual property owners.

2. Current Federal Involvement in Subnational Forest Policy: A Collection of Insufficient Incentives

The primary federal programs aimed at forest conservation are few and are only voluntary, incentive-based programs. To be clear, these programs will play an important role if there is to be any comprehensive forest policy across scales. But to the extent that they are of relatively limited impact, and more robust prescriptive regulatory intervention is necessary, they are simply not enough to constitute a truly dynamic policy approach to forest management.

Perhaps the most prominent of these programs is the Forest Legacy Program (FLP).[180] The FLP is implemented by the Forest Service and state forestry agencies in an effort to prevent the conversion of private forestlands to nonforest uses. This is achieved primarily through the purchase of conservation easements.[181] The federal government may fund up to 75% of conservation easement project costs while the remaining 25% comes from private, state, or local sources.[182] A number of other similar programs may be utilized to encourage landowners to preserve forests, but as with the FLP these have very little impact on the primary forest management activities of most forest owners. Even so, the U.S. Department of Agriculture offers a variety of programs that offer financial assistance or conservation easement creation for the conservation of nonindustrial private forestlands, including the Environmental

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180. *Forest Legacy Program: Protecting Private Forest Lands from Conversion to Non-Forest Uses*, UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE, http://www.fs.fed.us/spf/coop/programs/loa/aboutflp.shtml (last visited Sept. 24, 2014) [hereinafter *Forest Legacy Program*] (on file with the Washington and Lee Law Review); *see also* Jessica Owley & Stephen J. Tulowiecki, *Who Should Protect the Forest?: Conservation Easements in the Forest Legacy Program*, 33 PUB. LAND & RES. L. REV. 47, 55–65 (2012) (explaining the background, mechanics, and general concerns of the Program).

181. Owley & Tulowiecki, *supra* note 180, at 55–65.

182. *Forest Legacy Program*, *supra* note 180.

Quality Incentives Program,[183] the Conservation Stewardship Program,[184] and the Healthy Forests Reserve Program.[185] Although these programs may arguably represent a mild form of political dynamism, in that these federal incentive programs represent at least *some* federal political action aimed at subnational forests, it is not the robust type of political dynamism needed to forestall the threats to U.S. forests in the coming decades. In other words, to the extent that states fail to act to protect forest resources the federal government needs to establish a more robust minimum standards scheme—a regulatory policy that states can then supplement with primary police power regulations. In fact, the current collection of federal programs seems to be voluntary rather than regulatory as a direct result of remnant notions of constitutional dualism. The federal government, perceiving constitutional federalism constraints for any type of prescriptive regulatory inputs, created programs that the states or private property owners can opt into on a voluntary basis, thus skirting any constitutional federalism constraints.

Ultimately, the politics of U.S. forest policy is currently tilted toward the dual end of the federalism spectrum, whereby the federal government maintains direct forest management regulatory inputs only into federal forests and provides very limited incentive-based or voluntary programs for the management of subnational forests. On the other hand, states may or may not maintain comprehensive forest management policies. Similarly, in states where forest policies are lax, they may or may not allow local governments to develop their own forest policies. Though we have seen a transition to more dynamic understandings of constitutional allocation of regulatory authority in the environmental context over the last century, that transition is not yet "complete," whatever that term may come to

183. Environmental Easement Program, 16 U.S.C. § 3839 (2012).

184. *Conservation Stewardship Program*, U.S. DEP'T OF AGRIC., NATURAL RESOURCES CONSERVATION SERVICE, http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

185. *Healthy Forests Reserve Program*, U.S. DEP'T OF AGRIC., NATURAL RESOURCES CONSERVATION SERVICE, http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/forests (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

mean. As a result, the dualistic nature with which we view forest policy in the United States as a political matter may cause damage to U.S. forest resources. Both the ecology and economics of modern forestry has shifted, and neither ecology nor economics supports the legal entrenchment of dualism in the area of U.S. forest policy.

D. Implications of Legal and Political Dualism for U.S. Forests and the Normative Case for Dynamism

The implications of maintaining a legally and politically dual federalist approach to U.S. forest policy are stark. This subpart first makes a normative argument that the historically understood basis for maintaining dualism in forest policy has been undermined by new understandings of the forest resource, ecologically and economically. The subpart then discusses how legal dualism informs political action, or the lack thereof, regarding the management of the nation's forests—a state of affairs that must be addressed before the nation can move toward more dynamic forest policy. Finally, the subpart discusses how changes in ownership and use of forests over the last two decades are outpacing the shift toward dynamic regulatory approaches for forests, which provides an even more urgent need for adoption of the normative suggestions of this Article.

1. The Fallacy of a Forest Federalism "Matching Principle"

Federalism scholarship is rife with descriptive and normative assertions about how the Constitution does or should allocate regulatory authority among levels of government.[186] One of the primary foundations for dual federalist arguments, at least in the forest context, is Butler and Macey's "matching principle," which argues that the jurisdiction regulating a resource should match the geographic scope of the regulated resource.[187] Some have criticized this type of descriptive analyses as overly simplistic because it does not account for the many externalities that spill

186. *Supra* notes 56, 61; Schapiro, *supra* note 35; Engel, *supra* note 18.

187. Butler & Macey, *supra* note 19.

over jurisdictional boundaries, the increasing scientific recognition of the interconnectedness of resources in the natural environment, and the benefits that multilevel governance can provide.[188] Nonetheless, the matching principle does seem to drive the perpetuation of dualist notions of land use planning generally and private forest management specifically—that state and local governments (or even just private property owners) are best positioned to direct local development or forestry activities due to better access to information and the direct assumption of the local benefits and burdens of development or timber extraction. In addition, another dualistic argument for forest policy seems to be that private forest landowners and state and local governments are best situated to design management standards for regulating forest resources clearly anchored to specific, discernible plots of land.

Society's understanding of the role of forests as a "stationary" resource, however, is rapidly changing. Though each tree may be anchored to an individual plot of land, forests may now be conceptualized as fluid as the waters regulated under the federal Clean Water Act or the air regulated under the federal Clean Air Act. As discussed in Part III.B., maintaining or increasing the carbon stocks sequestered by U.S. forests requires a large, functional forest spreading across private property lines and state and local government jurisdictional boundaries. In a legally and politically dualistic federal system, if each subnational government decided it was in its best interest to promote development for economic growth while maintaining lax forest management standards, then each government might "rationally" appropriate most of the forest resources within its jurisdictional boundaries.[189] Such action would have dramatic interstate commercial impacts on not only carbon mitigation potential of forests (the regulation of which would be akin to regulation of air

188. *See* Engel, *supra* note 18, at 165–66 ("[T]he scholarly preoccupation with a rigid allocation of state and federal environmental regulatory authority is misguided for a number of reasons."); Jim Salzman & J.B. Ruhl, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide For Whittling Away*, 98 CAL. L. REV. 59, 69–70, 103–106 (2010) (characterizing the "matching principle" as a one of many "misguided policy 'panaceas'").

189. *See* HUDSON, *supra* note 1 (analyzing the impact of federal governance on local, national, and global resource management).

pollutants under the federal Clean Air Act) but also water quality (implicating the federal Clean Water Act) and biodiversity (implicating the federal Endangered Species Act). It would also adversely affect more directly the future economic viability of the forest products industry—an industry which, in the Southeast alone, has provided millions of jobs and contributed billions of dollars annually to the economic productivity of the nation.[190] As noted earlier, no other country in recent decades has produced as much timber as the southern United States.[191] Despite the historic conceptualization of forest resources as local resources anchored to the ground within discrete private property or government jurisdictional boundaries, there is a strong foundation for arguments regarding the constitutional validity of federal minimum forest standards legislation that state and local governments can supplement in a dynamic manner. The ability to craft a comprehensive domestic climate program that harnesses the power of forests to combat climate change will depend in part on moving toward a dynamic conception of forest federalism. Following on this legal foundation, there should be political action at all scales to craft effective multiscalar, dynamic forest policies.

2. The Legal Perspective, Political Reality Conundrum

Politically, federal reticence to engage in subnational forest management standard setting may be called into question, given that, legally, the interstate commercial impacts of subnational forest management are becoming increasingly apparent. As a result, scholars and policy makers should establish a foundation of arguments for the constitutional validity of federal legislation aimed at addressing holes in subnational forest policy pursuant to Commerce Clause authority.[192] To adequately manage these dynamic resources, there should be as much overlap as possible

190. WEAR & GREIS, *supra* note 5, at 17.

191. *Id.*

192. *See generally* Blake Hudson, *Commerce in the Commons: A Unified Theory of Natural Capital Regulation Under the Commerce Clause*, 35 HARV. ENVTL. L. REV. 375 (2011) (providing novel legal arguments for the regulation of resources under the Commerce Clause).

in jurisdictional regulatory authority between local governments, state governments, and the federal government to capture the benefits of dynamic federalism. To the extent that one level of government is not adequately addressing subnational forest management, other levels of government should be constitutionally permitted to fill the void.[193]

Yet for governments to do so, the lay of the federalism land, so to speak, must be fully understood. It is exceedingly difficult to determine whether the constitutional status of subnational forest management is solidly dual based on the jurisprudence, which in turn informs political decisions to treat them as such, or rather whether we have simply politically chosen to leave those areas within the dualist domain and therefore do not test the constitutional waters to assess the validity of that legal perception. In other words, legal perception drives political reality and vice versa in these areas, and determining the true driver of the status quo is to engage in an intellectual endeavor quite like pondering the grandfather paradox of time travel.[194] Regardless of this difficulty, there can be no excuse for political inaction if the legal arguments are clear. Legal perception must change so that political reality can follow. Otherwise, political dualism will continue to guide subnational forest management policy as policy makers perceive a legally dualistic status for subnational forest management.

For legal perception to change, scholars and analysts must make sound arguments that certain forms of federal prescriptive regulation of dynamic resources like subnational forests pass constitutional muster under the Commerce Clause. This way, legislative mechanisms for managing dynamic resources across levels of governance will move beyond being normatively desirable, and will also be constitutionally permissible in areas

193. As Professor Engel has noted, there is "danger [in] charging any one level of government with environmental protection and closing the door to the policy-making efforts of other levels of government." Engel, *supra* note 18, at 181.

194. The grandfather paradox of time travel is a logical conundrum. If a grandson travels back in time to a point before his father was born and kills his grandfather, then the grandson will have prevented his own birth, which raises a question: How did the grandson travel back in time in the first place? *See* DAVID LEWIS, THE PARADOXES OF TIME TRAVEL 4–5 (1976), http://www.csus.edu/indiv/m/merlinos/Paradoxes%20of%20Time%20Travel.pdf.

where dualistic notions currently remain. Such a foundation can serve as a reference point for legislators seeking to implement effective solutions without constitutional complication and for courts adjudicating conflicts over the allocation of regulatory authority. As a result, the balance of federal and subnational inputs may be struck in a more dynamic way—a balance that may call for greater federal inputs in circumstances where subnational governments fail to act on matters increasingly implicating interstate commerce and the national interest, or a balance that may call for subnational governments to design even more effective policies than could be designed by the federal government.

3. An Increasingly Urgent Challenge: Changes in the Ownership and Use of Forest Resources Outpace a Needed Shift to Dynamic Federalism

The entire issue of federal involvement in subnational forest management is complicated by the perpetual, and even increasing, entrenchment of dualistic perspectives on subnational forests. Dynamic shifts in the ownership and use of today's forest resources may be outpacing the needed shift toward dynamic forest policy. For example, despite the importance of forest resources both globally and in the United States, a curious forest governance scenario has arisen over the last two decades. Between 1998 and 2010 there was a massive shift in the ownership and use of forest resources in this country. Twenty years ago a significant portion of southeastern forests were owned by private industrial corporations, such as Weyerhaeuser, International Paper, and Georgia Pacific, among other paper companies.[195] These corporations generally maintained responsible forest management practices—though they did so voluntarily, since, as discussed in Part III.B above, states in the

195. *See Southern Forest Ownership*, SOUTHERN FORESTS FOR THE FUTURE, http://www.seesouthernforests.org/discover-southern-forests/solutions/ownership (last visited Sept. 24, 2014) ("In the past, [companies that owned forests] were primarily integrated industrial forest product firms, but increasingly corporate forest ownership has become dominated by real estate investment trusts and timber investment management organizations.") (on file with the Washington and Lee Law Review).

southeast maintain little to no forest management regulatory standards. Nonetheless, if the federal government sought legislative inputs into private forest management activities of entities engaged in timber production, it likely could do so rather easily pursuant to constitutionally dynamic federalism principles. The United States Congress could pass a "Carbon Sequestration and Forest Management Act" asserting constitutional dynamism and testing the waters of judicial interpretation regarding the scope of Congress' Commerce Clause authority. Such an act could establish mechanisms that utilize forests to sequester carbon to combat climate change, restrictions on clearcutting, afforestation and reforestation requirements, annual allowable cut, stand density requirements, riparian buffer zones to protect the nation's waters, or perhaps even habitat fragmentation standards aimed at biodiversity, to name a few example policies. If found constitutional by the judiciary, then the federal government could allow state and local governments to formulate their own forest standards within the federal standards framework, thus establishing a dynamic federalism approach.

The federal government could do so because the markets into which these timber products flow are clearly part of interstate commerce, and any court assessing the constitutionality of such federal legislation would likely find it viable under the Commerce Clause's substantial effects test.[196] As noted above, timber production in the South alone, with its high proportion of private forestland subject predominantly to state jurisdiction, contributed more than 1 million jobs and $51 billion of employee compensation in 2009.[197] Also as noted, southeastern forests are "the most intensively managed forests in the United States,"[198] from which a majority of the United States' lumber is harvested.[199] Furthermore, federal regulation would reach the activities of private property owners notwithstanding any other constitutional complications, such as Fifth Amendment takings claims, because 89% of U.S. timber is harvested from private

196. *See generally* Hudson, *supra* note 192.

197. *Id.*; WEAR & GREIS, *supra* note 5, at 17.

198. WEAR & GREIS, *supra* note 5, at 29.

199. *Id.* at 5.

lands.[200] A variety of other natural resources on private lands are reached by constitutionally validated federal regulation when appropriation of those resources has substantial effects on interstate commerce.[201] For example, the Endangered Species Act—which is probably the best illustration of the shift toward dynamic federalism in the natural capital context in the United States—has been held constitutional even as applied to entirely intrastate species with arguably tenuous connections to interstate commerce.[202] It seems clear, then, that timber products as a commodity harvested by large-scale industrial owners and the interstate markets into which they flow more readily support the case for meeting the substantial effects test under Commerce Clause analysis than do endangered species that are not exchanged on the open market.[203]

In the southeastern United States, however, between 1998 and 2010, large commercial interests rapidly divested much of

200. U.S.D.A., U.S. FOREST FACTS AND HISTORICAL TRENDS 7 (2001) http://fia.fs.fed.us/library/briefings-summaries-overviews/docs/ForestFactsMetric.pdf. Carbon flux, or the net difference between carbon removal and carbon addition to the atmosphere, is 50% greater on public forestlands in the United States than on private forestlands, most likely resulting "from greater land use conversions and disturbance (including timber harvest) on private forests relative to public forests." Eric M. White & Ralph J. Alig, *Public and Private Forest Ownership in the Context of Carbon Sequestration and Bioenergy Feedstock Production—A Briefing Paper on Existing Research and Research Needs* 9–10 (2010), http://www.fsl.orst.edu/lulcd/Publicationsalpha_files/White_Public_Private_Briefing.pdf.

201. *See* Gonzales v. Raich, 545 U.S. 1, 22 (2005) (upholding the federal regulation of marijuana); United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 133 (1985) (upholding the regulation of wetlands by the federal government); Hodel v. Indiana, 452 U.S. 314, 326 (1981) (upholding the federal regulation of minerals); Hodel v. Va. Surface Mining & Reclamation Ass'n,, 452 U.S. 264, 281 (1981) (upholding the federal regulation of minerals); Wickard v. Filburn, 317 U.S. 111, 128–29 (1942) (upholding the federal regulation of wheat); *see also* Babbitt v. Sweet Home Ch. Cmtys. for a Great Ore., 515 U.S. 687, 708 (1995) (noting that Congress has exercised its delegated powers in crafting the Endangered Species Act); Tenn. Valley Auth. v. Hill, 437 U.S. 153, 194 (1978) (stating that Congress not only has the power to create legislation, but also to determine the relative priority for the country).

202. *See* Rancho Viejo, LLC v. Norton, 334 F.3d 1158, 1158 (D.C. Cir. 2003) (Sentelle, J., dissenting) (arguing against the application of the Commerce Clause to the intrastate taking of non-commercial species); *id.* at 1160 (Roberts, J., dissenting) (stating that the majority's denial of a rehearing *en banc* allows a broadening of the Commerce Clause which conflicts with *Lopez* and *Morrison*).

203. *See generally* Hudson, *supra* note 192.

their timber holdings, resulting in smaller private forest properties that are "subject to new dynamic forces that encourage parcelization and fragmentation."[204] This transition has been described as "the most substantial transition in forest ownership of the last century," as industry divested nearly three-quarters of its forest holdings.[205] Most of this forestland was purchased by timber investment management organizations (TIMOs) and, more importantly for this Article, real estate investment trusts (REITs). These REITs typically do not have a primary interest in the commodity aspect of the timber but rather are interested in the commercial value and use of the land upon which the timber exists for commercial, residential, or industrial development—the timber is merely incidental and ancillary to property ownership. Indeed, REITs not only represent a voting block whose interests are diametrically opposed to high forest management and preservation standards, but their ownership of forest resources exacerbates the concerns regarding urbanization and reduction of forest cover over the next fifty years.[206] The U.S. Forest Service has highlighted the truism that "[p]rivate owners continue to control forest futures" in the southeastern United States.[207]

As a result, any federal regulation of timber resources owned by REITs, and meant to curb the projected loss of 13% of southeastern forests over the next fifty years, would not be aimed at a commodity market that is a clear case of interstate commerce but rather at land use planning meant to preserve a resource that would otherwise be appropriated by economic or commercial land development activities. In other words, over the last two decades significant forest resources shifted from an area that, while still influenced by dualistic notions, lent itself to more robust Commerce Clause arguments for overlapping and dynamic jurisdictional regulatory authority at all levels of government. Those resources shifted into a sphere of constitutional understanding—direct land use planning—where currently notions of dual federalism remain even stronger and federal input is even more certain to be unwelcome, both politically and legally.

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204. WEAR & GREIS, *supra* note 5, at 58.

205. *Id.* at 60–62.

206. *Id.* at 60.

207. *Id.* at 4–5.

As noted in the conclusion of this Article, there are good arguments that even these land development activities substantially affect interstate commerce enough to pass constitutional muster. Even so, such a direct clash of federal constitutional authority and areas of traditional, exclusive state regulatory control has yet to occur. Demonstrating the arbitrariness that often pervades governance of environmental resources, while the recognized importance of the forest resource has shifted in the direction of needing a nationwide policy to utilize forests to combat climate change and to capture other forest values, the constitutional justification supporting dynamic regulation of the resource has arguably shifted in the opposite direction, making federal utilization of subnational forests for climate mitigation policies even more difficult.

To summarize, there are at least two ways in which we might categorize subnational forests: (1) those forest resources being managed as timber and sent into commercial markets and (2) those forest resources owned by property owners whose primary focus is not timber production, but who may maintain a goal of transitioning forests to other developed uses. Neither category is currently reached by federal regulatory inputs into forest standards, but the constitutional and political case for dynamic regulatory approaches is potentially easier for the former. The latter, on the other hand, might be more problematic as direct forest preservation more clearly falls into a category historically considered a traditional state and local government regulatory role under the dual federalism paradigm—an ironic situation considering that keeping forests forested, rather than converted to agricultural, industrial, commercial, residential or other urban development, is more critical to combating climate change and other environmental ills than is ensuring that timber operations meet certain basic standards. As a result, any legal arguments addressing the constitutional validity of federal legislation aimed at subnational forests will need to tackle both the "timber as commodity" and "timber as ancillary to property ownership" questions. Then—hopefully—policy makers at all levels of government would feel justified in engaging in the regulatory process to set forest standards ranging from the most basic, timber extraction-focused standards to more stringent, forest-preservation standards.

IV. Federalism and U.S. Forest Policy in Context: How History Informs the Path Forward

This Article's current call for increased dynamism in U.S. forest policy is not without precedent. An important historical context, largely overlooked in the literature, informs the normative arguments made in this Article and demonstrates that the United States has been very close to implementing a dynamic federalism approach to U.S. forest policy in the past. Importantly, and ironically, the United States almost did so due to threats facing southern forests. As discussed below, the primary distinction between the past near miss with dynamism and the present is the type of threat facing the forest—then it was fire, now it is urbanization and climate change. This Part recounts this historical context through the scholarship of Professor William Boyd, who undertook a fascinating review of the history of southern forestry since the turn of the twentieth century.[208]

The history of privately owned southern forests is one that seems to have largely been forgotten, but it is a history that demonstrates a much greater interest by both the federal government and southern state governments in southern forest management than seen at the present time. After the Civil War, the southern states exploited their forests almost out of existence, leading to "probably the most rapid and reckless destruction of forests known to history" and what William Faulkner called "the slain wood."[209]

In contrast to the seemingly limited federal administrative or congressional interest in southern private forests today, a series of federal studies and inquiries into the implications of southern deforestation took place at the beginning of the twentieth century. In 1919, Gifford Pinchot, the "father" of the U.S. Forest Service, authored a report predicting a timber shortage in the nation, which prompted the U.S. Forest Service, in the "Capper Report,"[210] to assess the potential role of the federal government

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208. William Boyd, *The Forest is the Future? Industrial Forestry and the Southern Pulp and Paper Complex*, *in* THE SECOND WAVE: SOUTHERN INDUSTRIALIZATION FROM THE 1940S TO THE 1970S 168 (Philip Scranton ed., 2001).

209. *Id.* at 168 nn.25–26.

210. Capper–Volstead Act, Pub. L. No. 67-146, ch. 57, 42 Stat. 388 (1922) (codified as amended in 7 U.S.C. §§ 291, 292).

in regulating private forest management.[211] The severity of the timber supply problem in the South was made clear when the Capper Report concluded that the South would need to *import* timber to sustain timber supply.[212] This is despite the fact that in 1911 the U.S. Congress passed the Weeks Law[213] to provide funding to state agencies to curb forest destruction due to widespread fires. Later, the Clarke–McNary Act of 1924[214] attempted to increase these fire protection efforts even further. Both the Capper Report and the Clark–McNary Act investigated state and local forest taxation practices that were encouraging premature cutting of what little timber was not destroyed by fire.[215] This prompted southern states to adopt special tax provisions aimed at promoting industrial forestry.[216] In 1928, the McSweeny–McNary Forest Research Act[217] authorized the first nationwide forest survey, which was seen as a necessary step before policy changes could facilitate investment in southern forests.[218] Two decades later, the Forest Pest Control Act of 1947[219] represented federal and state cooperation to resolve pest and disease problems.[220]

The early twentieth century federal interest in state and private forest management represented a debate that "centered on whether the federal government should regulate private forestry directly or assist state governments and industry

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211. Tom Paulu, *Gifford Pinchot was Father of U.S. Forest Service*, THE DAILY NEWS ONLINE (June 27, 2008, 12:00 AM), http://tdn.com/lifestyles/gifford-pinchot-was-father-of-u-s-forest-service/article_bba03335-149a-5611-bbe4-392d0ac62eec.html (last visited Sept. 24, 2014) (on file with the Washington and Lee Law Review).

212. Boyd, *supra* note 208, at 174–75.

213. Weeks Act, Pub. L. No. 61-435, ch. 186, 36 Stat. 961 (1911) (codified as amended in scattered sections of 16 U.S.C.).

214. Clarke–McNary Act, Pub. L. No. 68-270, ch. 348, 43 Stat. 653 (1924) (codified as amended in 16 U.S.C. §§ 568 to 570).

215. Boyd, *supra* note 208, at 183–84.

216. *Id.* at 185.

217. McSweeney–McNary Forest Research Act, ch. 678, 45 Stat. 699 (1928) (codified as amended in 16 U.S.C. § 581).

218. Boyd, *supra* note 208, at 176.

219. Forest Pest Control Act, ch. 141, 61 Stat. 177 (1947) (codified as amended in 42 U.S.C. §§ 594-1, 594-1 note, 594-2 to 594-5).

220. Boyd, *supra* note 208, at 181.

through cooperative institutions and programs"—a debate which "stemmed from the growing concern among professional foresters and political leaders over the extent of forest destruction in the U.S. during the 1910s and 1920s."[221] In large part the debate over whether federal prescriptive regulation was necessary was founded upon the fact that the high degree of assistance provided by federal and state governments was not succeeding in creating responsible forest management practices on private lands.[222] One government report even recommended a massive federal acquisition of private forests in the amount of 224 million acres—an amount *ten million acres greater* than the entire acreage of southeastern forests today.[223] The report recommended this drastic step as a mechanism for "ensuring that the nation's timberlands would be properly managed."[224]

These drastic steps were never taken, however, and ultimately federal assistance of forestry in the South won out over federal prescriptive regulation. Professor Boyd describes the transformation of southern forests from veritable wasteland after the Civil War to one of the most productive commodity forests on the earth as involving three phases: (1) rationalization, (2) regeneration, and (3) intensification.[225]

Rationalization involved making the southern forests worthy of investment. The primary problem stifling investment was fire, with Gifford Pinchot declaring that "[u]nless fires are checked, forestry in the Southern pineries will never appeal to men of good business sense."[226] The fire problem was so widespread that the desire to invest in southern forests was chilled. A 1930s survey found that fires occurred on more than three-quarters of the state of Georgia's total forest area, which is quite unimaginable today. In fact, the South led the nation in both the frequency and acreage burned by forest fires, accounting for 85% of all forest fires in the country in the 1920s and 1930s—even though the

221. *Id.* at 187.

222. *Id.*

223. SOCIETY OF AMERICAN FORESTERS, *The State of America's Forest* 61–63 (2007), http://www.safnet.org/publications/americanforests/stateofamericasforests.pdf.

224. Boyd, *supra* note 208, at 187.

225. *Id.* at 171–72.

226. *Id.* at 176.

south only contained around one-third of the nation's total forest area.[227] Nearly half of these fires resulted due to the "deep-seated cultural practice of annual woods-burning" that was "part of the very fabric of rural life in the South."[228] To achieve rationalization, the McSweeny–McNary Forest Research Act survey was critical in solving the fire problem and "represented a very important intervention in the emerging discourse on forestry practices in the South, particularly in the context of fire control."[229] In the same way, the Forest Pest Control Act of 1947 represented federal and state cooperation to resolve the insect and disease problems within southern forests and the Capper Report and Clark–McNary Act's emphasis on state taxation practices helped resolve the premature cutting of timber not destroyed by fire.[230]

The next phase that transformed southern forests, regeneration, involved the reforestation and afforestation of degraded forest and agricultural lands. Once the fire, pest, and tax problems were addressed during the rationalization phase, reforestation efforts took place in full force, primarily led by large industrial timber operators. These efforts were bolstered by federal support in the Clark–McNary Act of 1924, providing funding to states and private property owners for forest planting on private lands[231] and "usher[ing] in an era of cooperation between the federal government, state governments, and private actors on matters of forest policy and management."[232] Regeneration indeed occurred apace, bolstered by incentive-based programs like the 1956 Soil Bank Act,[233] which resulted in the conversion of more than 2 million acres of cropland into timber plantations between 1956 and 1960.[234] The Conservation Reserve Program of the 1980s had the same effect.[235] Between 1948 and

227. *Id.* at 178.

228. *Id.*

229. *Id.* at 177.

230. *Id.* at 181.

231. *Id.* at 186–87.

232. *Id.* at 187.

233. Soil Bank Act, ch. 327, 70 Stat. 188 (1956) (codified as amended in scattered sections of 7 U.S.C.).

234. Boyd, *supra* note 208, at 192.

235. *Id.*

1968 nearly 10 million acres of southern agricultural land was converted to timberland,[236] and by the late 1980s regeneration of forests by public and industrial private and nonindustrial private landowners added an additional 2.5 million acres.[237]

The third phase, intensification, involved the taking of newly regenerated forestlands and making them even more productive through scientific advances, such as through the use of genetically superior trees that were more pest resistant and had quicker growth rates. The avid conservationist Aldo Leopold even criticized the forest industry for assuming that all trees were equal and for ignoring the study of tree genetics to drive forest operations.[238]

The three phases of rationalization, regeneration, and intensification ultimately turned the southeastern forest into the "wood basket of the world."[239] Beginning in the 1930s, the forest products industry began a dramatic shift to southern forests, which Thomas Clark calls the "grand march south."[240] In only twenty years, the South shifted from a 15% share of the total woodpulp capacity in the United States to a 55% share. By 1990, this share had grown to 71%.[241]

The story of southeastern forests in the early twentieth Century is in large part about whether federalism should be restructured to become more dynamic to forestall threats to U.S. forest resources. President Roosevelt and others contemplated that the federal government had the constitutional authority to act to curb forest destruction in the South and called for federal action to do so. Perhaps the closest the federal government came to prescriptive regulation of private forestry is Article X of the Lumber Code of the National Industrial Recovery Act of 1933 (NIRA).[242] This provision aimed to "commit[] the lumber industry

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236. *Id.* at 193.

237. *Id.* at 192.

238. *Id.* at 194.

239. *Id.* at 172.

240. THOMAS D. CLARK, THE GREENING OF THE SOUTH: THE RECOVERY OF LAND AND FOREST 114 (1984).

241. Boyd, *supra* note 208, at 170.

242. National Industry Recovery Act, ch. 90, 48 Stat. 195 (1933) (codified as amended in scattered sections of 15 U.S.C. and 40 U.S.C.).

to principles of conservation and sustained yield."[243] The Supreme Court ultimately found the entire statute unconstitutional on various grounds,[244] and in part found that "where the effect of intrastate transactions upon interstate commerce is merely indirect, such transactions remain within the domain of state power."[245] It is important to note, however, that this case was during a period of narrow Commerce Clause interpretation, and just before the 1937–1995 period where the Supreme Court failed to strike down one statute as beyond Congress's Commerce Clause authority.[246] President Roosevelt, however, did not give up on prescriptive federal involvement with southern forest policy so easily. As William Boyd describes, President Roosevelt sought to address the "forest problem," which, in the words of Roosevelt:

> is a matter of vital national concern, and some way must be found to make forest lands and forest resources contribute their full share to the social and economic structures of this country, and to the security and stability of all our people." Evoking images of "denuded" watersheds and "crippled" forest communities "still being left desolate and forlorn," Roosevelt urged the Congress to study the problem and propose legislation that would include "such public regulatory controls as will adequately protect private as well as the broad public interests in *all* forest lands."[247]

Going further, Roosevelt noted that "most of the States, communities, and private companies have, on the whole, accomplished little to retard or check the continuing process of using up our forest resources without replacement . . . it seems obviously necessary to fall back on the last defensive line—Federal leadership and Federal Action."[248] Roosevelt was in fact articulating a key principle of dynamic federalism, whereby the federal government may act as a fail-safe when subnational

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243. Boyd, *supra* note 208, at 187.

244. *See* Schechter Poultry Corp. v. United States, 295 U.S. 495 (1935) (invalidating the challenged code provisions).

245. *Id.* at 546.

246. *See, e.g.*, Randy E. Barnett, *The Original Meaning of the Commerce Clause*, 68 U. CHI. L. REV. 101, 101 (2001) (stating that *Lopez* was the first time in sixty years the Court held a statute to exceed the powers of the Commerce Clause).

247. Boyd, *supra* note 208, at 188 (emphasis added).

248. *Id.* at 189.

governments are unable to coordinate to avoid economically and environmentally destructive consequences for the nation as a whole.[249] In an action that is hard to imagine today, an Alabama Senator, John Bankhead, launched an investigation into the problems highlighted by Roosevelt, and his committee "concluded that the management of commercial forest land under private ownership represented the crux of the so-called forest problem."[250] Southern politicians today seem more interested in promoting the urbanization of southern forestlands to gain the economic benefits of development in their jurisdictions rather than dealing with the threats to southern forests.[251]

The mere threat of federal regulation, however, played a role in changing the management of southern forests, which may be an instructive cue for how to achieve more dynamic forest policies today. Pulp and paper firms largely moved toward a system of conservation, regeneration, and minimum standards for forest protection, and even encouraged nonindustrial private landowners to do the same.[252] In 1937, representatives of the pulp and paper industry crafted the "Statement of Conservation Policy of the Southern Pine Pulpwood Industry," which committed the industry to promote selective cutting, forest restoration, and fire protection.[253] Indeed, the Southern Pulpwood Conservation Association forged a motto of "[c]ut wisely, prevent fires, and grow more trees for a better South," which "symbolized the extent to which forest protection and forest regeneration were being framed in the language of *moral duty*."[254]

In the end, the route of federal assistance was chosen over federal regulation, largely because the threat of federal regulation and assistance efforts regarding fire, insects, and perverse tax incentives caused an incredibly quick turnaround for southern forests, leading to rapid reforestation. It seems that this was enough to satisfy Roosevelt and others, who through a skeptical lens may not have been as concerned with

249. *See generally* Hudson, *supra* note 159.
250. Boyd, *supra* note 208, at 189.
251. *See* Hudson, *supra* notes 69, 192.
252. Boyd, *supra* note 208, at 190.
253. *Id.*
254. *Id.* (emphasis added).

environmental degradation of southern forests as with the devastating economic impacts that a degraded southern forest would have on the nation. Alabama Senator Bankhead's committee report "effectively marked the end of the push for federal regulation."[255]

With this context as a backdrop, we can see that while history does not repeat itself, it certainly does rhyme, as climate change and urbanization of the South may be characterized as the new fire problem. As a result, a new push for federal minimum forest standards is needed, combined with dynamic action by state and local governments. As Professor Boyd described, any institutional program to address the fire problem in the early twentieth century would necessarily have been crafted through "cooperation between state and federal agencies, the forest products industry, and private landowners. Because fire did not respect political or administrative boundaries, moreover, a successful strategy required a regional focus. Fire control, to put it crudely, represented a collective action problem that demanded new forms of coordination."[256] The same may be said for urbanization and deforestation in the South and its climate change implications.

Importantly, however, the effects of the voluntary assistance provided to the South in regenerating southern forests in the early twentieth Century are distinguishable from any voluntary federal or state programs today. The shift in the resource base toward reforestation last century had strong economic drivers—to tap southern forests' ability to provide economic growth to the nation as a whole. Economic drivers today are running in the opposite direction. As the forest industry has shifted overseas and divested their landholdings, the nation loses not only industrial focus on keeping forests forested but also industry's influence on nonindustrial landowners to do the same. The markets for forest products dry up when the big players move out, leaving smaller players with incentives to convert forests to other uses or to sell to others who will do the same, such as REITs. The gains made in reforestation during the first push for federal regulation of private forests are now set to be undone, not only in the carbon

255. *Id.* at 213 n.99.

256. *Id.* at 178.

storage context but also regarding biodiversity, water quality, and many other areas where forests provide critical services.

So, again, there are two things to be learned through comparing the historical context of southern forestry with today's state of affairs—namely that the current threats to the southern forest resources come from both within the forest sector and from without. From within the forest sector we have learned that monoculture plantations are more vulnerable to forest pathogens, reduce species diversity and habitat, and the shift of industry overseas have reduced profitability in the region, hence the dumping of holdings by major industrial players in the region.[257] So at a first level the nation needs to move toward dynamic federalism providing more holistic forest management standards—standards that capture a wider range of ecosystem-centric forest values as represented in Figure 1, above. From without—and arguably the more urgent threat—southern forests face pressure from urbanization and climate change impacts. Thus, we need to move to forest policy dynamism that simply keeps forests forested for their carbon sink potential if nothing else. Of course, co-benefits of preserving forests in the face of rapid urbanization will be biodiversity, water quality, and other beneficial environmental protections.

V. Conclusion: Toward a Dynamic Federalism Formula to Protect Dynamic Resources

To remedy a highly fragmented U.S. forest policy, lawmakers and scholars should move beyond a myopic focus on federal forests. Two-thirds of the nation's forests are in the hands of subnational entities, either state and local governments or private property owners. These entities maintain virtually exclusive management control over the nation's forests due to a historical inertia of legal and political dual federalist conceptions of forest regulation. To forestall the threats facing forests and the society that depends upon them in the coming decades—especially climate change—the nation needs to move toward dynamic federalism in the forest arena. This would call for

257. *Id.* at 202.

cooperative regulatory action at all scales of governance. While this Article laid a descriptive foundation for the current state of U.S. forest policy and made the normative argument that the nation should move toward dynamic federalism, this Article's companion piece will detail how the nation should do so—from the constitutional arguments for federal inputs into subnational forest policy to the legislative structure of such efforts.

This Article highlighted that two separate categories of forest standards need political attention: (1) those related to industrial extraction of forest products; and (2) those related to land uses that would replace forests with development. Recent research establishes a unified theory for assessing the validity of congressional authority to regulate each of these categories, utilizing commons analysis to do so.[258] This analysis will form the foundational constitutional arguments for this Article's companion piece. Commons analysis demonstrates that the federal government maintains constitutional authority to regulate two categories of environmental resources that have substantial effects on interstate commerce: (1) natural resources contained on land (wetlands, forests, endangered species, or other natural capital) that are appropriated by economic development (commercial, housing, industrial, agricultural, etc.), and (2) resources appropriated by individuals and tied to an interstate market (wheat, marijuana, or other natural capital commodities).[259] Timber commodities clearly fall into this latter category. Though it seems clear that timber production on private lands can be constitutionally regulated by the federal government under this second category, federal preservation of forests threatened by urbanization—such as the forests in the Southeast—may be constitutionally viable under the first category. Any time commercial development replaces forest resources, there is an appropriator of the resource tied to interstate markets (the developer) and a resource that is being appropriated (the forest). These are the constituent components of a commons, and it is the act of "appropriation" by the developer of the forest resource that substantially affects interstate commerce and that may be aggregated to give the federal

258. *See generally* Hudson, *supra* note 192.

259. *Id.* at 382.

government constitutional authority over resource management.[260]

Either way, if the federal government sought input into subnational forest policy pursuant to its Commerce Clause power, there are strong arguments that it may do so—either to provide standards for timber production or to preserve forests and their corresponding carbon sequestration and climate change mitigation values in the face of threatening urbanization. Ultimately, the constitutionality of federal subnational forest management legislation has yet to be tested by the U.S. Congress or within U.S. courts—despite the fact that there are good arguments supporting its legitimacy.[261]

To be clear, this Article and its companion piece are not arguing for a massive "over-centralization" of forest policy. Clearly, decentralized forest policy making provides many well-recognized benefits.[262] Achieving these benefits is one of the driving purposes behind establishing a federal form of government in the first instance,[263] and decentralized inputs are

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260. *See id.* at 423–27 (providing a "clear framework within which to analyze the 'object' of natural capital regulation")*; see also* HUDSON, *supra* note 1.

261. *See generally* Hudson, *supra* note 192, at 430.

262. *See generally* Blake Hudson, *Federal Constitutions, Global Governance, and the Role of Forests in Regulating Climate Change*, 87 IND. L.J. 1455 (2012).

263. Scholars have noted that federalism promotes economic growth, reciprocity in the enforcement of the law, safeguards against the potential tyranny of centralized power, encourages local citizen participation in governance and experimentation with new forms of governance, and administrative efficiency as decentralized governments can specifically tailor laws to fit local needs. *See* Keith S. Rosenn, *Federalism in the Americas in Comparative Perspective*, 26 U. MIAMI INTER-AM. L. REV. 1, 6–7 (1994) (discussing the advantages of federalism); *see also* Marcus B. Lane, *Decentralization or Privatization of Environmental Governance? Forest Conflict and Bioregional Assessment in Australia*, 19 J. RURAL STUD. 283, 284–85 (2003) (discussing arguments for environmental governance through civic engagement). In the same way, decentralized forest policy-making has been shown to reduce central government bureaucracy, corruption, and political meddling, provide more efficient decision-making and better access to knowledge of local needs and constraints, increased information flow between local and central governments, and greater local cooperation and participation in governance. *See* Hans M. Gregersen et al., *Forest Governance in Federal Systems: An Overview of Experiences and Implications for Decentralization*, *in* THE POLITICS OF DECENTRALIZATION: FORESTS, POWER AND PEOPLE 13, 27–28 (Carol J. Pierce Colfer & Doris Capistrano eds., 2005).

important components of effective resource governance on local, national, and global scales. Nonetheless, given the increased recognition of the key role of forests in regulating global atmospheric carbon, maintaining federal regulatory authority in addition to subnational authority provides a mechanism to course-correct a trend of "over-decentralization" of forest management policy, whereby disaggregated state and local forest policies fail to coordinate in a way that facilitates holistic and consequential forest conservation and climate change responses.[264] In this way, nations like the United States can "strike a balance between centralized planning and minimum standards at the federal level and decentralized implementation, harnessing of local information and expertise, and other benefits at the subnational level."[265] Indeed, a well-recognized condition of successful forest governance in federal systems is "effective and balanced distribution of forest related responsibilities and authority among levels of government,"[266] because "[c]ertain forest management decisions are better made at the subnational, or even local levels of government, while others may best be retained at a central level."[267]

It is time that U.S. forest policy followed suit with the regulation of other natural resources and became more dynamic. This Article is an initial attempt to develop a framework for how it may do so. Without a shift away from archaic notions of dual federalism in the forest sector, it will not only be this nation's forests at stake but also its water, biodiversity, coastline, fishery, and air quality resources. Perhaps even more importantly, given the key role of forests in regulating climate and the persuasive role the United States might play in forestalling developing world deforestation, failure of the United States to solve its own forest problem in this century will have global ramifications for centuries to come.

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264. *See generally* HUDSON, *supra* note 1.

265. Hudson, *supra* note 262, at 1481.

266. Arnoldo Contreras-Hermosilla et al., *Forest Governance in Countries with Federal Systems of Government*, 39 GOVERNANCE BRIEF 7 (2008), http://www.cifor.cgiar.org/publications/pdf_files/GovBrief/GovBrief0739E.pdf.

267. *Id*.