Sackett and Beyond: Reading Recent Supreme Court Decisions Through the Lens of Adaptive Governance

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I. INTRODUCTION

In a world where climate change is causing natural environments to shift in unpredictable ways and where human activity is pushing the limits of our planetary boundaries,[1] humans will need to manage social-ecological systems differently than in the past. The elements in legal systems that seek stability and security may impede needed adaptation by societies. In contrast, the presence of certain qualities and conditions in legal systems can enhance a society's ability to navigate environmental shifts and adapt where necessary. These factors include the flexibility of social systems and institutions to address change, effective multi-level governance, and the capacity of institutions to provide for participation. All these features are conditioned by legal structures, concepts, and institutions, including the background circumstances created by national constitutions—both in textual substance and judicial interpretation.

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1. Johan Rockström et al., *Planetary Boundaries: Exploring the Safe Operating Space for Humanity*, 14 ECOL. & SOC'Y art. 32 (2009).

In late 2023, one of us argued that the current U.S. Supreme Court's approach to constitutional governance presents a substantial disruption to the system that has prevailed in the United States since the New Deal.[2] In the near-century since President Franklin Roosevelt and the New Deal Democrats pulled the country out of the Great Depression through expanded federal authority, judicial doctrines evolved to consolidate a view of constitutional governance that empowered regulatory agencies with discretion and flexibility to support innovation and address challenges in a changing world. This model aligns with and supports a conceptualization of resilience in the ecological sense[3]—one that furthers adaptive qualities rather than locking in the rigidity of resilience in an engineering sense.[4]

The current Court, in chipping away at the New Deal model, seeks to limit the regulatory authority of expert federal agencies and science-based policy while expanding the governance authority of unelected judges. Opinions handed down by the Supreme Court in the 2023-2024 term confirm this trend, adding to a collection of cases that give the judiciary more power and make it harder for executive agencies to implement laws like the Clean Water Act. This trend poses a threat to the structural flexibility and resilience (in the ecological sense) necessary to

2. Shannon Roesler, *Constitutional Resilience*, 80 WASH. & LEE L. REV. 1523, 1557-1558 (2023) (demonstrating how Bruce Ackerman's model of constitutional change highlights flexible mechanisms and pathways in the U.S. Constitution and constitutional history that have allowed for expression of the popular will, representing stability in an ecological sense). This vision of the Constitution as flexible and enabling is the "foundation of the federal regulatory state and attendant models of cooperative federalism and shared governance." *Id.* at 1557. It is the basis on which our modern environmental regulatory system is built. Roesler argues that the U.S. Supreme Court is increasingly challenging New Deal governance structures, handing down cases that "seek to redesign constitutional doctrines for engineering resilience, a development that threatens the flexibility necessary for adaptive governance." *Id.* at 1558.

3. Roesler briefly summarizes the history of dueling notions of resilience:

> This distinction between engineering and ecological resilience arises out of a moment in ecosystem sciences when two fields—one dominated by ecology and the other by the physical sciences and engineering—were converging. [C.S.] Holling observed that the ecological literature contained two definitions of resilience: "One definition focuses on efficiency, constancy, and predictability—all attributes at the core of engineers' desires for fail-safe design. The other focuses on persistence, change, and unpredictability—all attributes embraced and celebrated by biologists with an evolutionary perspective."

Id. at 1532 (internal citations omitted). The takeaway is that "[b]oth engineering and ecological resilience focus on a system's 'stability,' but they seek to stabilize different things. Engineering resilience 'focuses on maintaining efficiency of function,' while ecological resilience 'focuses on maintaining existence of function.'" *Id.* at 1533.

4. *Id.* at 1533-34.

enable *adaptive governance* in the United States and facilitate adaptation measures by society in the face of a shifting environment.

This essay proceeds as follows: We first provide in Part II a brief overview of the key role that adaptive governance plays in supporting social-ecological resilience,[5] as well as the role that law—especially constitutional law—plays in conditioning, shaping, and structuring adaptive governance. In Part III, we consider scholarship on maladaptive qualities of law that may impede society's ability to adapt governance to respond to various challenges, including shifting environmental conditions. We use these qualities as analytical lenses through which to consider the implications for legal resilience of elements in the Supreme Court's holdings in *Sackett v. EPA* (2023)[6] and *Loper Bright Enterprises v. Raimondo* (2024).[7] Finally, we consider in Part IV the implications that the cases, and the trends they exemplify, hold for constitutional governance structures—specifically, federalism and the separation of powers—and the future of adaptive governance of social-ecological systems.

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5. For this Article, we adopt the definition of "resilience" used by Carl Folke et al.: "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks." Carl Folke, et al., *Adaptive Governance of Social-Ecological Systems,* 30 ANN. REV. OF ENV'T & RES. 441, 443 (2005).

6. We assume that most readers of this journal are familiar with the primary cases discussed and thus provide only a minimum of contextual detail here. In *Sackett v. Environmental Protection Agency*, the plaintiffs owned a vacant lot in Idaho on which they sought to build a home. The lot, which contained wetlands, was located near a navigable lake but was physically separated from the lake by other lots. As part of construction, the plaintiffs backfilled a portion of their lot. The EPA, finding that the wetlands on the property were protected by the Clean Water Act (CWA), ordered the plaintiffs to stop work and restore the wetlands. Plaintiffs sued, arguing that the CWA did not apply to their land. Sackett v. Env't Prot. Agency, 598 U.S. 651, 662-663 (2023). Eventually, the Supreme Court granted certiorari and ruled in the plaintiffs' favor, holding that the CWA extends only to wetlands that have a continuous surface connection with "waters" of the United States—i.e., a relatively permanent body of water connected to traditional interstate navigable waters. *Id.* at 678-679. From a wetlands science perspective, this decision presents implementation challenges.

7. Arising out of a dispute over the Department of Commerce's authority to require the commercial herring fishing industry to pay for the monitoring of its vessels, Loper Bright Enterprises v. Raimondo offered the Supreme Court the opportunity to overrule the *Chevron* deference doctrine, under which courts were required to defer to a reasonable agency interpretation of a statute administered by the agency if Congress had not directly addressed the relevant issue. The Court held that the Administrative Procedure Act (APA) requires courts to exercise their independent judgment in deciding whether an agency has acted within its statutory authority, and courts may not defer to an agency's legal interpretation simply because a statute is ambiguous. Loper Bright Enterprises v. Raimondo*,* 603 U.S. 369, 412 (2024) ("*Chevron* is overruled. Courts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority, as the APA requires.").

II. ADAPTIVE GOVERNANCE FOR RESILIENCE OF SOCIAL-ECOLOGICAL SYSTEMS

Governance, broadly, encompasses the setting, application, and enforcement of rules.[8] Scholars have identified elements of governance that affect the resilience of social-ecological systems (SES),[9] including effective multi-level governance, the flexibility of social systems and institutions to address change, and the capacity of institutions to provide for participation.[10] Law necessarily plays a key, though not plenary, role in governance.[11] "Adaptive governance" has been suggested as an umbrella concept for coupling law and social-ecological resilience.[12]

8. Anne Mette Kjær, *Governance*, 10-12 (Polity Press 2004).

9. "Social-ecological systems" is the term used to refer to interacting ecological ("self-regulating communities of organisms interacting with one another and with their environment") and social (economic, governance, and other human systems that condition how humans interact with the environment) subsystems. Fikret Berkes, et al., *Introduction, in* NAVIGATING SOCIAL-ECOLOGICAL SYSTEMS: BUILDING RESILIENCE FOR COMPLEXITY AND CHANGE 1, 2-3 (2002). This term, as opposed to "socio-ecological system" or another form that treats one of the terms as a prefix, is intended to "to emphasize the integrated concept of humans in nature and to stress that the delineation between social and ecological systems is artificial and arbitrary." Carl Folke, et al., *Adaptive Governance of Social-Ecological Systems*, 30 ANNUAL REV. ENV'T RES. 441, 443 (2005). Though scholars in many fields operate with a good understanding of what constitutes a SES, science has failed to produce a unifying definition. Johan Colding & Stephan Barthel, *Exploring the Social-Ecological Systems Discourse 20 Years Later*, 24 ECOL. & SOC'Y 4:(1), art. 2, 8 (2019).

10. Brian Walker & David Salt, RESILIENCE THINKING: SUSTAINING ECOSYSTEMS AND PEOPLE IN A CHANGING WORLD (Island Press 2006); Jonas Ebbesson, *The Rule of Law in Governance of Complex Socio-Ecological Changes,* GLOB. ENV'T CHANGE 20 (3): 414, 414 (2010).

11. Jonas Ebbesson & Ellen Hey, *Introduction: Where in Law Is Social-Ecological Resilience?*, 18 ECOL. & SOC. (3) art. 25, 1 (2013). Brian Walker, an Australian ecologist, has argued that legal systems (and lawyers) are primary sources of low and declining resilience in the western world. *See* Brian Walker, *A Commentary on 'Resilience and Water Governance: Adaptive Governance in the Columbia River Basin'*, 17 ECOL. & SOC. (4), art. 29, 1 (2012). He applauds the work of legal scholars arguing for more integration of adaptive governance approaches and insists that transformational change—something law is often designed to slow or inhibit—will be required to prevent declines in human wellbeing. *Id.* Scholars have also called for efforts to "bridge the gap between legal and transition research to support the achievement of sustainability goals," arguing that law can have "accelerating, braking and steering roles" for societal transitions and that it must be understood as a complex system. Niko Soininen, et al., *A brake or an accelerator? The role of law in sustainability transitions,* 41 ENV'T INNOVATION & SOCIETAL TRANSITIONS 71, 71 (2021).

12. Olivia Odom Green, et al., *Barriers and Bridges to the Integration of Social-Ecological Resilience and Law*, FRONTIERS IN ECOL. & THE ENV'T 13 (6): 332, 334; *see also* Alejandro E. Camacho, *Adapting Governance to Climate Change: Managing Uncertainty Through a Learning Infrastructure*, 59 EMORY L.J. 59 1 (2009).

Broadly defined, adaptive governance is governance in which individuals collaborate in managing ecosystem resilience, often employing the strategies of adaptive management across institutions, networks, and structures at multiple scales.[13] The concept evolved out of efforts to understand and operationalize "adaptive management," which arose in the 1970s as ecologists and other scientists sought to use experimental, quantitative science to inform the management of environmental and natural resources.[14] Over time, participation in decision-making expanded beyond scientific "experts" to integrate stakeholders from local communities, industries, and other elements in society, and the academic literature began to focus on adaptive governance.[15]

Adaptive governance tends to encompass ideas of overlapping levels of authority such as overlapping state-federal authority. It sometimes incorporates principles of "dynamic" or "polycentric" federalism.[16] Dynamic federalism describes a system in which centers of authority at varying levels—often state and federal governments—share and exchange various roles, powers, and responsibilities as needed, with loose coordination.[17] This structure offers the benefits of enabling alternative regulatory solutions and preventing regulatory capture of federal lawmakers.[18]

Cooperative federalism is a form of dynamic federalism wherein the state and national governments share power and collaborate on overlapping functions; this system has existed in U.S. environmental law with the federal government setting national anti-pollution standards while the states implement those standards within their borders. Of the

13. Roesler, *supra* note 2, at 1535.

14. C.S. Holling, ADAPTIVE ENVIRONMENTAL ASSESSMENT AND MANAGEMENT (1978) https://pure.iiasa.ac.at/id/eprint/823/1/XB-78-103.pdf. Toddi Steelman describes the underlying objective of adaptive management as the use of management policies "as hypotheses so that the results of a management experiment could help refine management action (or natural resource manipulation) to improve ecological resilience." Toddi Steelman, *Adaptive Governance*, *in* HANDBOOK ON THEORIES OF GOVERNANCE 580, 581-82 (Christopher Ansell & Jacob Torfing, eds., 2d ed. 2022).

15. Steelman, *supra* note 14, at 582.

16. DeCaro, et al., *Legal and Institutional Foundations of Adaptive Environmental Governance*, 22 ECOL. & SOC'Y (1) art. 32, 9 (2017).

17. Kirsten Engel uses the term "dynamic federalism" to refer to all theories, however named, that reject a "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." Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176-77 (2006).

18. *Id.*, at 163, 177.

many flavors of federalism, cooperative federalism in the legal sense is perhaps less dynamic than some others,[19] but the supremacy of federal law it presupposes is key to setting ecological standards for cross-boundary issues and avoiding an economic race to the bottom.[20] Though adaptive law literature privileges more localized decision-making, it acknowledges that sound management requires standards that guide decisionmakers' discretion in maintaining adaptive capacity and ensure they are accountable.[21]

Adaptive governance can be conceptualized institutionally as nested rule structures, wherein operational rules, collective choice rules, and constitutional rules structure decisions and actions, interacting to affect activity at other levels.[22] Operational rules are generally analogous to the local level of governance, structuring daily decisions about how to appropriate resources, provide information, monitor actions, and enforce rules.[23] Collective choice rules, which affect the policy and management decisions that determine the rules for managing a resource, are analogous to state or federal statutory governance, while constitutional rules, like those set out in a national constitution, determine who is eligible to participate as well as the specific governance structure to be used in crafting collective choice rules.[24]

Steelman quotes Elinor Ostrom in describing how the different sets of rules interact and structure activity at other levels:

> Decisions made in constitutional-choice situations indirectly affect operational situations by creating and limiting the powers that can be exercised within collective-choice arrangements (creating legislative and judicial bodies, protecting rights of free-speech and property, etc.) and by affecting the decision regarding who is represented and with what weight in collective decisions.[25]

19. *See* Christopher K. Bader, *A Dynamic Defense of Cooperative Federalism*, 35 WHITTIER L. REV. 161, 171-172 (2014).

20. *See* Engel, *supra* note 17 at 164.

21. *See* Craig Anthony (Tony) Arnold & Lance H. Gunderson, *Adaptive Law and Resilience*, 43 ENV'T L. REP. 10426, 10436 (2013) (emphasizing the importance of "appropriate and relevant standards to govern the exercise of discretion and to which decisionmakers can be held accountable").

22. Steelman, *supra* note 14 at 584.

23. *Id.*

24. *Id.*

25. *Id.*, (citing Elinor Ostrom, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 192 (1990)).

Thus, constitutional and collective rules play a crucial role in influencing the operational level. Steelman notes that "recognizing the interdependent complexities among the nested levels of governance helps us better understand barriers to adaptive management."[26] Seeking to use adaptive management at operational levels may be unrealistic if adaptive governance structures are not present at higher levels to support the action. For example, adaptive structures of cooperative federalism that acknowledge agency expertise enable local and state policies that foster the ecological resilience of watersheds and ecosystems.

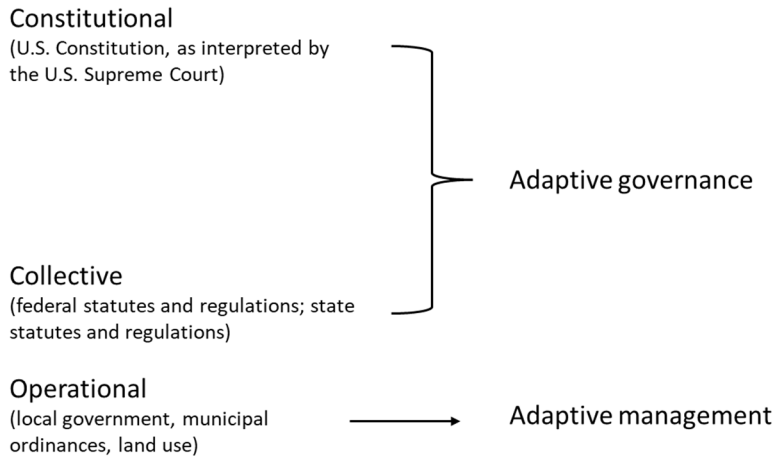

Figure 1: Nested rule structures mapped to adaptive governance, based on Steelman (2022), with modifications by the authors.[27]

Some scholars have explored the role of law in structuring governance capable of facilitating adaptive management, adaptation, and transformation in the face of climate change and other environmental challenges.[28] They acknowledge that law can reduce social flexibility and

26. *Id.* at 585.

27. Adapted from Toddi Steelman, *Adaptive Governance*, *in* HANDBOOK ON THEORIES OF GOVERNANCE 580, 585 (Christopher Ansell & Jacob Torfing, eds., 2d ed. 2022).

28. *See e.g.,* Robin Kundis Craig, *"Stationarity Is Dead"— Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENV'T L. REV. 9 (2010); Green et al., *supra* note 12; Barbara A. Cosens, Robin K. Craig, Shana Lee Hirsch, Craig Anthony (Tony) Arnold, Melinda H. Benson, Daniel A. DeCaro, Ahjond S. Garmestani, Hannah Gosnell, J.B. Ruhl, & Edella Schlager, *The Role of Law in Adaptive Governance*, 22 ECOL. & SOC'Y (1), art. 30 (2017); DeCaro et al., *supra* note 16; Barbara A. Cosens, Lance Gunderson, & Brian C. Chaffin, *Introduction to the Special Feature Practicing Panarchy: Assessing Legal Flexibility, Ecological Resilience, and Adaptive Governance in Regional Water Systems Experiencing Rapid Environmental Change*, 23 ECOL. & SOC'Y (1), art. 4 (2018).

lock in rigid priorities, even when change is desirable and supported by the electorate. "Adaptive law" refers to "features of a legal system that are both internally adaptive and resilient to a wide range of possible disturbances and facilitate the resilience and adaptability of both nature and society—and their constituent systems—to disturbances."[29]

Much of the adaptive law literature focuses on state and federal legislation and administrative implementation (roughly equivalent to the operational and collective choice levels as described by Steelman),[30] perhaps taking the constitutional level as given or fairly static. This focus is not surprising because operational and collective choice rules more directly govern decision-making about resources. But as we argue here, constitutional rules that shape governance structures—such as federalism and the separation of powers—are critical to facilitating adaptive law because they define the boundaries of policymakers' discretion and responsiveness to change. Although rigid constitutional rules promote stability in the engineering sense and may even be desirable in some cases, rules that render governance structures rigid and inflexible undermine ecological resilience because they do not support adaptive features such as overlapping federal-state-local governance.[31]

III. WHAT FEATURES MAKE LAW MALADAPTIVE FOR SOCIAL-ECOLOGICAL RESILIENCE?

About a decade ago, Arnold and Gunderson, noting the dearth of general overarching principles to guide the legal system toward ecological resilience, explored and elaborated the contours of adaptive law.[32] They analyzed the ways in which law can be ill-suited to address governance challenges in rapidly changing environments, identifying and elaborating on four qualities in the U.S. legal system that are maladaptive and thus impede efforts to manage social-ecological systems in a shifting

29. Craig Anthony (Tony) Arnold & Lance H. Gunderson, *Adaptive Law, in* SOCIAL-ECOLOGICAL RESILIENCE AND LAW 205, 205-06 (Ahjond S. Garmestani & Craig R. Allen, eds., 2013).

30. *See id.*; Arnold & Gunderson, *supra* note 21.

31. Arnold and Gunderson acknowledge the tension between these competing objectives under the law:

> The problem for the legal system is to provide enough and the right kind of stability that helps society and ecosystems to absorb shocks and changes without going into decline or collapse, while also providing enough and the right kind of flexibility that helps society and ecosystems to adapt to shocks and changes in resilient and sustainable ways.

Arnold & Gunderson *supra* note 21 at 10436.

32. Arnold & Gunderson, *supra* note 21; Arnold & Gunderson *supra* note 21.

environment.[33] Our discussion reviews these qualities with a focus on specific aspects of each that are evoked by the Supreme Court's decisions in *Sackett* and *Loper Bright* and considers the implications for constitutional governance structures.

The first maladaptive quality is that law often tends to incorporate systemic goals that are too narrowly focused—often on advancing the stability of economic or political systems.[34] For example, by giving primary or sole value to economic institutions, such as the protection or preservation of private property rights or the facilitation of investment, or by perpetuating the inflexible implementation of traditional institutions, the law can undermine the health and resilience of ecosystems, as well as social institutions such as local communities, families, or cultures. Arnold and Gunderson argue that adaptive legal regimes ought to support the management of resilience broadly, including ecosystem resilience and the adaptive capacity of social-ecological systems.[35]

Arguably, the Court's recent decisions, particularly in *Sackett,* indicate a preference for narrow, traditional policy goals—i.e., the supremacy of property rights—over policy that enables science-based decisions that take ecosystem resilience into account and support the ecological and social benefits that stem from the preservation and careful management of healthy wetlands. As Justice Kagan observes in dissent, the majority opinion ignores the central importance of wetlands to the quality of surface waters traditionally covered under the Clean Water Act.[36] Instead of endorsing the adaptive approach to wetlands management used by eight presidential administrations, the Court majority focuses narrowly on private property rights.

Justice Kagan explains how this focus on the stability of private property undermines the adaptive capacity of ecosystems: "There is, in other words, a thumb on the scale for property owners—no matter that the

33. Arnold and Gunderson are explicit that they are proposing a model with an empirical, not just a normative, purpose, and that they are thinking about a model that would be adopted in the United States. Arnold & Gunderson, *supra* note 21 at 205. This article, too, is limited to applying those analytical principles in the context of U.S. law, whether constitutional, statutory, or case law.

34. *Id.* at 207.

35. Arnold & Gunderson, *supra* note 21, 10428. Arnold and Gunderson argue that "[t]he failure of legal institutions to value and facilitate the resilience of ecosystems, such as watersheds, wetlands, forests, deserts, and urban ecosystems, threatens the health, sustainability, and resilience of social systems that depend on ecosystems," but they also note that, in instances where objectives include or favor ecosystems, they may give primacy to the environment and ignore social system needs, potentially incurring backlash that is detrimental to both nature and people. *Id.* at 10429.

36. Sackett v. EPA, 598 U.S. 651, 711-12 (2023).

Act (*i.e.*, the one Congress enacted) is all about stopping property owners from polluting."[37] For the Court, protecting property owners from the costs of regulation overrides society's interest in preserving and protecting natural ecosystems and the loss of benefits they offer, including—in the case of wetland landscapes—flood mitigation for the property and surrounding properties, carbon sequestration utility, and the health of flora and fauna that depend on the ecosystem.

The second maladaptive feature is that law can support governance structures that impede adaptivity. For example, when policy priorities are determined by only one center or source of authority, they are inherently less adaptable than policies that reflect more voices and input.[38] Arnold and Gunderson argue that resilience is enhanced by polycentrism—a governance structure with multiple centers or sources of authority, including the private sector.[39] Polycentric legal structures can promote SES resilience in various ways, including through experimentation and innovation in governance (e.g., treating states and cities as "laboratories of democracy"), risk diversification (the odds of multiple approaches all failing is much lower than the risk of one overarching approach), redundancy of resources (multiple centers of authority provide resources and functions and are able to step in when others decline), and more proportionate matching in scale, scope, and speed of response.[40] This assumes, of course, that authorities value the well-being and resilience of social-ecological systems and are part of a hierarchy that identifies the well-being and resilience of social-ecological systems as an objective, as

37. *Id.* at 713.

38. *See* Morrison, et al., *Mitigation and Adaptation in Polycentric Systems: Sources of Power in the Pursuit of Collective Goals,* 8 WIREs CLIMATE CHANGE e479, 1, 4-5 (2017).

39. *Id.* at 10433.

40. *Id.*

did federal laws such as the Clean Water Act[41] using the cooperative federalism model that prevailed in the last century.[42]

The Court's holding in *Sackett* perpetuates maladaptive governance structures, undermining cooperative federalism by prioritizing the exclusive use of traditional state authority over land and waters and restraining a federal law that would protect ecosystems.[43] This prioritization of private property rights and the states' exclusive right to regulate them inherently requires a re-entrenchment of power shifted from the federal government back to the states (cooperative federalism moving back toward dual federalism), wherein the "traditional power" of the states to regulate land and wherein water limits the ability of the Clean Water Act to act as a regulatory driver and politically disinclined states have no obligation to protect or regulate wetland landscapes.[44]

Governance structure across a single level of government may also be maladaptive when coequal branches of government seize or cede power to support a rigid and inflexible vision of shared power under the Constitution. In *Loper Bright*, the Court ignored the uncertainty and complexity of social-ecological systems, including the ambiguity inherent in distinguishing law from policy. Declaring that the judiciary must "say what the law is," the Court overturned forty years of precedent requiring

41. Section 101 of the CWA provides that the law's objective is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Robert Adler has examined the CWA with an eye toward evaluating how well the statute has achieved those statutory goals. Although he rates the CWA as "among the nation's more successful environmental statutes," he suggests four refinements to enable the statute to "realize the ambitious but entirely appropriate objectives Congress articulated in 1972," including, firstly, "mak[ing] better use of current concepts of ecosystem resilience rather than the notion of ecosystem stability that prevailed when the 1972 law was passed." Robert W. Adler, *Resilience, Restoration, and Sustainability: Revisiting the Fundamental Principles of the Clean Water Act,* 32 J. OF L. & POL. 139, 172-73 (2010).

42. Without such policy priorities, polycentricism has the potential to devolve into unfettered deregulation, leaving natural resources potentially subject to a race to the bottom of regulatory protections.

43. States and tribes submitted amicus briefs in *Sackett* emphasizing the role of federal power in *protecting* state and tribal interests in their water resources. For example, Colorado's brief described the state's hydrological landscape, noting that Colorado is home to the headwaters of five multistate rivers and that partnership with federal agencies enables the state to regulate the water quality of these important river systems. Brief of Amicus Curiae State of Colorado in Support of Respondents, at 13, Sackett v. EPA, No. 21-454 (S. Ct. June 17, 2022). The tribes similarly emphasized how limited federal jurisdiction would endanger their sovereign interests in water resources by undermining their ability to prevent "cross-border pollution, including destruction of upstream wetlands that protect tribal waters and harm treaty protections." Brief of Menominee Indian Tribe of Wisconsin and 17 Federally Recognized Indian Tribes as *Amici Curiae* in Support of Respondents, at 3, Sackett v. EPA, No. 21-454 (S. Ct. June 17, 2022).

44. Roesler, *supra* note 2 at 1596.

deference to agency experts in the interpretation and implementation of ambiguous statutory language.[45] The ruling facilitates the transfer of power from subject-matter experts answering to elected officials (or their political appointees), who are theoretically accountable to the voting public,[46] to unelected judges who are generally experts only in the law and moves regulatory policymaking out of the realm of rules that are ideally responsive to new scientific knowledge and into the relatively slower and non-scientific expert realm of the judiciary.

Arnold and Gunderson's third and fourth maladaptive qualities are closely related. Law often involves inflexible methods that rely on rules and legal abstractions that demand certainty and resist change, and it may be heavily dependent on rational, linear, legal-centralist processes that assume away uncertainty rather than confront it head-on. Legal systems often favor predetermined pathways defined by rigid rules and planning requirements, certainty and security in resources and structures, avoidance of risk, liability for errors, and decisions based on legal abstractions.[47] This rigidity conflicts with the complexity and uncertain dynamics of interconnected ecosystems and social systems, which necessitate the use of discretion and judgment by expert human decision-makers to adapt to changing conditions and to respond to situations and local knowledge not addressed in legal rules. Legal processes are often expected to proceed in a linear fashion and apply artificial legal classifications for the sake of simplification and certainty—all of which may be at odds with the complex reality of social-ecological-legal interrelationships. These processes may also lack important feedback mechanisms that are essential for monitoring, evaluating, learning from, or adapting actions and decisions. The presence of meaningful feedback serves adaptive law by incorporating new information, evaluation results, and accountability into planning, management, and regulatory processes.

Both *Sackett* and *Loper Bright* evidence the current Court's inclination toward legal abstractions and formalism in ways that belie the state of science and the modern world. Maladaptivity, via inflexible methods and linear, legal-centralist processes, is visible in the test the majority puts forth in *Sackett* to determine whether jurisdiction exists

45. Loper Bright Enterprises v. Raimondo, 603 U.S. 369, 385 (2024).

46. We would be remiss not to acknowledge that changes made by the second Trump administration to diminish the expertise of the career civil service, in favor of something that more resembles the nineteenth century's spoils system, have the effect of undermining a primary justification for agency jurisdiction in the first place.

47. Arnold & Gunderson, *supra* note 21 at 10436.

under the Clean Water Act.[48] The majority's test utterly ignores the complexity of wetlands science and seems inclined not to require scientific analysis at all, seeking instead to simplify the inquiry to a yes/no question dependent on the justices' preference for "ordinary parlance."[49] The Court majority imposes requirements such as a "continuous surface connection" to provide property owners with notice and certainty and critiques the "uncertainty" laden in the significant nexus test used by the EPA and its reliance on evolving science.[50] But although the majority's legal abstractions draw lines and demand certainty, they do not map onto hydrological systems and they ignore broader socio-ecological contexts and the disruptions of human activity, including climate change.

Loper Bright also adopts inflexible and rigid methods and privileges judges' perspectives over the scientific analysis of technical experts. Now, once a court decides the "best" reading of a statute, it is binding. Agencies are no longer free to change interpretations (to adapt to change) when new information and science is made available, as they were when the courts could defer to their reasonable interpretation of an ambiguous statute under Step 2 of *Chevron*. The Court's rigid approach to legal interpretation as a judicial enterprise separate from the policymaking delegated to administrative agencies rests on an inflexible approach to the separation of powers that expands judicial authority at the expense of Congress and expert agencies.

Table 1: Maladaptive qualities of law in *Sackett* and *Loper Bright*.

Quality	**As exemplified in *Sackett***	**As exemplified in *Loper Bright***
Narrow policy objective	Prioritizes a landowner's right to develop property;[51] prioritizes regulatory certainty/protection from prosecution for landowners.[52]	Prioritizes preservation or reassertion of judicial power, underscoring an inflexible demarcation of separation of powers.[53]
Governance structure	Limits jurisdiction of Clean Water Act, undermines a cooperative federalism approach to water/wetlands, resulting in little to no protective regulation over wetlands in many states.[54]	Enhances judicial power and diminishes power of legislative and executive branches by holding that courts may no longer defer to reasonable interpretations of statutory language by agencies.
Inflexible methods	Adopts a definition of "waters of the United States" that precludes science-based assessments by agencies, which employ experts in ecology, hydrology, and other relevant sciences.[55]	Relies on an abstract distinction between law and policy to separate legal interpretation by judges from policymaking by agencies.

51. *Id.* at 669-670 (noting that "this unchecked definition of 'the waters of the United States' means that a staggering array of landowners are at risk of criminal prosecution or onerous civil penalties. What are the landowners to do if they want to build on their property?").

Overdependence on rational, linear, legal-centralist processes that assume away uncertainty rather than address it	Imposes an artificial (non-science based) distinction that is difficult to implement because phrases like "continuous surface connection" appear definitive but raise questions when applied[56]	Relies on assumption by courts that there is a singular meaning of a statute fixed at the time of enactment (even when the statute is silent).[57]

These maladaptive qualities, described by Arnold and Gunderson and visible in the *Sackett* and *Loper Bright* decisions, are reshaping constitutional rules and will play a crucial role in influencing the scope of

49. *Id.*

50. The Court argues that "this freewheeling inquiry provides little notice to landowners of their obligations," thus leaving landowners on their own "'to feel their way on a case-by-case basis'" in navigating potentially "severe criminal sanctions for even negligent violations." *Sackett*, 598 U.S. at 681.

51. *Id.* at 669-670 (noting that "this unchecked definition of 'the waters of the United States' means that a staggering array of landowners are at risk of criminal prosecution or onerous civil penalties. What are the landowners to do if they want to build on their property?").

52. The majority critiques the "uncertainty" laden in the significant nexus test used by the EPA and its reliance on evolving science (stating that "this freewheeling inquiry provides little notice to landowners of their obligations," thus leaving landowners on their own "'to feel their way on a case-by-case basis'" in navigating potentially "severe criminal sanctions for even negligent violations.") *Sackett*, 598 U.S. at 681.

53. The focus on the assertion of judicial power is prevalent in the majority opinion; note how the majority views *Chevron* as "prevent[ing judges] from judging," rather than "from making policy." 603 U.S. 369, 404 (2024).

54. The Court clearly prioritizes the states' authority over the regulation of land and water, calling such authority "the core of traditional state authority" and warning that "an overly broad interpretation of the Clean Water Act's reach would impinge this authority." *Sackett*, 598 U.S. at 679-80. This prioritization is in line with and supportive of a vision of federalism as "dual federalism," with exclusive spheres of influence distributed between the states and federal government and rejects the more collaborative federalism of recent decades. *See also* Roesler, *supra* note 2.

55. *Sackett*, 598 U.S. at 715 (Kagan, J., concurring) (stating that "[t]he Court, rather than Congress, will decide how much regulation is too much").

56. *Id.* at 726 (Kavanaugh, J., concurring) ("In particular, the Court's new and overly narrow test may leave long-regulated and long-accepted-to-be-regulable wetlands suddenly beyond the scope of the agencies' regulatory authority, with negative consequences for waters of the United States."). Justice Kavanaugh notes the practical effect of the Court's new test, yet the majority does not seem to address such concerns, instead suggesting that section 1344(g)(1) "cannot answer" the question of "what wetlands does the CWA regulate?" *Id.* at 676. This demonstrates the maladaptivity of the judiciary's test, as it ignores tangible impacts and limits agency authority to respond to such impacts.

57. The *Loper Bright* majority insists that statutes "must have a single, best meaning," with that meaning being "fixed at the time of enactment." 603 U.S. 369, 400 (2024) (quoting Wis. Cent. Ltd. v. U.S., 585 U.S. 274, 284 (2018) (emphasis omitted)). As many have already noted, the Court's emphasis on a fixed meaning of a statute will likely raise significant issues on delegation, thus leading to unimodal or monocentric governance structures characteristic of maladaptive governance.

action and management on the operational level, which hinders the implementation and use of adaptive management.

IV. CONCLUSION: DISRUPTING RESILIENCE IN CONSTITUTIONAL GOVERNANCE

Sackett v. EPA reflects the current U.S. Supreme Court's intent to reverse the constitutional governance shifts of the last century that enabled a model of federalism—cooperative federalism—that is relatively more supportive of adaptive governance and that enabled a legal *resilience* more aligned with the ecological conception of that term.[58] *Loper Bright*, handed down in June 2024, continues the trend to reshape constitutional governance structures and distribute power in ways that reduce the flexibility, nimbleness, and adaptability of the federal government. What these decisions share is a narrow focus on constraining administrative authority and concentrating judicial authority. They are maladaptive because they undermine the redundancy and flexibility of a separation of powers (both horizontal and vertical) that allows for overlapping centers of authority that can learn and respond to change and uncertainty. Compounding this rigidity is an approach to statutory interpretation that relies on "legal abstractions" divorced from a statute's purpose—even if that purpose furthers social-ecological resilience. *Sackett v. EPA*, for example, values a kind of false certainty (marking where water ends and land begins) over the health and resilience of watersheds.

These rulings arguably indicate a desire by the Court to revive old notions of separate spheres of sovereignty (dual federalism),[59] limit federal power, and adhere to a vision of separation of powers that crystalizes and accretes power to the unelected judiciary, all of which continue to reduce the resilience of our constitutional governance and lessen supporting conditions for adaptive governance.

As described above, both *Sackett* (discussed in depth by Roesler[60]) and *Loper Bright* constitute an accretion of power to the judiciary and a

58. Roesler, *supra* note 2 at 1564. Cooperative federalism is characterized by overlapping responsibilities and shared goals between the federal and state governments. Under cooperative federalism, the federal government provides funding and sets national standards, while state governments implement programs and policies in accordance with those standards.

59. Dual federalism, which involves a distinct, mutually exclusive separation between the powers and responsibilities of federal and state governments, was the prevailing understanding of governance from the country's founding through the early part of the twentieth century. Bader, *supra* note 19 at 165.

60. Roesler, *supra* note 2 at 1592.

move away from the integration of science and technical expertise into policy decisions. These decisions exclude scientists and other subject-matter experts in the executive branch from weighing in on how best to implement law and policy. For natural resource management and policy questions, these definitive and static interpretations untethered to science undermine the environmental governance that can support ecological resilience and threaten the adaptive capacity of laws and institutions in an era of climate change.

Although these trends are evident in decisions other than *Sackett* and *Loper Bright*, we end with further reflections on *Loper Bright* because it has inspired a torrent of popular and scholarly commentary offering various predictions about how it will affect administrative governance. Media accounts of recent cases invalidating agency action have already noted courts' use of *Loper Bright* as if it played a key role in the outcome.[61] Indeed, President Trump's close advisors clearly think that *Loper Bright* may make executive rollbacks of regulatory authority easier, even though the case is about an interpretive methodology used by courts.[62]

Only time will tell whether *Loper Bright* is deserving of all this attention. The rise of textualism as the predominant approach to statutory

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61. Jarryd Page, *What Next for NEPA? Takeaways from the D.C. Circuit's Dramatic Decision*, ENVIRONMENTAL LAW INSTITUTE: VIBRANT ENVIRONMENT BLOG (Nov. 19, 2024), https://www.eli.org/vibrant-environment-blog/what-next-nepa-takeaways-dc-circuits-dramatic-decision; Eli Sanders, *A Supreme Court Justice Warned That a Ruling Would Cause "Large-Scale Disruption." The Effects Are Already Being Felt*., PROPUBLICA (Sept. 23, 2024, 5:00 AM), https://www.propublica.org/article/supreme-court-chevron-deference-loper-bright-guns-abortion-pending-cases. *Loper Bright* has already been cited in a number of environmental and other cases. The holding has been used in cases challenging the authority of the Council on Environmental Quality to issue regulations under the National Environmental Policy Act by declaring its authority was *ultra vires,* Marin Audubon Soc'y v. Fed. Aviation Admin., 121 F.4th 902, 913 (D.C. Cir. 2024), as well as its authority to block agency action prohibiting gender-identity-based discrimination in health care and to require airline fee transparency.

62. *See* Ayelet Sheffey, *Elon Musk Says DOGE Can 'Gut the Federal Government' with a Recent Supreme Court Ruling. Some Lawyers Disagree.,* BUS. INSIDER (Dec. 7, 2024, 4:30 AM) https://www.businessinsider.com/elon-musk-ramaswamy-doge-spending-cuts-chevron-doctrine-scotus-trump-2024-12 *and* Ella Lee & Julia Shapero, *Musk, Ramaswamy 'DOGE' Confidence in Supreme Court May Be Tested*, THE HILL (Nov. 23, 2024, 6:00 AM) https://thehill.com/homenews/administration/5005220-elon-musk-vivek-ramaswamy-government-efficiency/. Indeed, in February, Trump signed an executive order instructing agency heads to rescind "unlawful regulations," including "regulations that are based on anything other than the best reading of the underlying statutory authority or prohibition," a clear reference to *Loper Bright*. Ensuring Lawful Governance and Implementing the President's "Department of Government Efficiency" Deregulatory Initiative (Feb. 19, 2025), https://www.whitehouse.gov/presidential-actions/2025/02/ensuring-lawful-governance-and-implementing-the-presidents-department-of-government-efficiency-regulatory-initiative/.

interpretation and the Court's turn toward a rigid view of the separation of powers likely give judges sufficient room to decide a case without deferring to agencies. A judge with a rigid view of the separation of powers can use textualist tools to determine statutory meaning with or without *Chevron*. *Loper Bright* simply makes clear that this is true even if the statute is ambiguous. Moreover, if a judge truly cannot resolve the ambiguity, questions about delegation are likely to surface. At this point, an agency interpretation with significant political or economic impacts will implicate the major questions doctrine and the court will invalidate the agency action at issue.

In short, *Loper Bright* is perhaps best understood as a symbol of a larger disruption in the constitutional rules that undergird our governance structures. A rigid view of the separation of powers and of federalism (in the form of dual sovereignty) necessarily constrains administrative governance, which does not fit neatly in one branch of government. Although agencies are part of the executive branch, they exercise executive, legislative, and judicial powers, a reality that fits uncomfortably with a rigid view of the separation of powers. Given that a majority of justices endorse this rigid view, *Loper Bright's* holding is not surprising: Courts must exercise their independent judgment to interpret statutes because the judicial power rests with the courts.[63]

When these values are made clear, recent cases that are not explicitly about governance structures nevertheless further the Supreme Court's focus on constraining agencies and empowering courts. For example, last term, in *Ohio v. EPA*, the Court stayed EPA's Good Neighbor Plan, a federal plan designed to address cross-state air pollution under the 2015 ozone standards. The majority found the EPA's explanation of its approach deficient.[64] This was not a case about statutory interpretation. This was a case about the EPA's efforts to ensure upwind states comply with Clean Air Act provisions protecting downwind states from harmful air pollution. Nevertheless, a majority of the Court was willing to second-guess an agency action that fell squarely within the agency's congressionally delegated policymaking authority, suggesting a willingness to aggressively police all agency action and further eroding the adaptive capacities of administrative governance.

63. 603 U.S. at 412. Note also that in *Securities and Exchange Commission v. Jarkesy,* also decided last term, the Court held that the SEC must bring civil enforcement actions for statutory securities fraud in federal courts, rather than in administrative adjudications. 603 U.S. 109 (2024).

64. Ohio v. Env't Prot. Agency, 603 U.S. 279, 295-298 (2024).

Both *Sackett* and *Loper Bright* indicate that "[t]he conservative majority's view of agency authority and desire to roll back federal jurisdiction seek to 'return' constitutional governance structures to a static, inflexible system."[65] These decisions reflect a larger agenda on the Court to limit the regulatory authority of the federal government and the discretion of federal agencies, both of which are likely to undermine adaptative governance and reduce the resilience of our social-ecological systems.

65. Roesler, *supra* note 2 at 25.