GREAT SALT LAKE AND THE FUTURE OF ENVIRONMENTAL LAW

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Great Salt Lake teeters on the verge of collapse. As an ecosystem of hemispheric significance, its decline poses an existential threat to the American West. Many have recognized the potential disappearance of Great Salt Lake as an "environmental nuclear bomb." Despite this urgency, however, existing tools of federal environmental law or combinations of litigation strategies under major environmental statutes, while valuable, are insufficient to address the complex problem of the lake's demise or generate lasting solutions.

In this Article, the authors explore environmental crises, like the collapse of Great Salt Lake, the progression or resolution of which would result in significant disruption of social, environmental, political, and economic systems. Through a case study of Great Salt Lake, we hoped to scour the pantheon of environmental law to create a viable path forward for environmental interest groups for Great Salt Lake. Instead, we found that no single federal law or combination of federal

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laws can provide a comprehensive solution to mitigate or reverse the lake's decline.

While our early assessments then pointed toward reliance on state-level action as a primary avenue for progress, subsequent analysis revealed significant shortcomings of this approach. Despite advancements by many states, including Utah, there remains a widespread reticence to implement the substantial measures necessary to effectively combat local environmental crises.

Great Salt Lake—emblematic of a new generation of climate-driven environmental disasters—demands novel strategies and an iteration of environmental law better suited for the problems posed by a rapidly changing climate.

We argue that the best path forward lies in a multifaceted approach that utilizes tenets of existing environmental law while leveraging coordinated efforts across federal, state, and local levels of governance. We posit that a scattershot, litigation-driven, adversarial approach to modern environmental crises is inadequate and, perhaps, counterproductive. Instead, we advocate for a coordinated legislative approach that builds on collaborative governance and achievable policy wins at all levels of government that can be leveraged to address the complex, interconnected challenges posed by environmental crises in the twenty-first century.

INTRODUCTION

> *"We have this potential environmental nuclear bomb that's going to go off if we don't take some pretty dramatic action."*
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> — Utah State Representative Joel Ferry[1]

1. Christopher Flavelle, *As the Great Salt Lake Dries Up, Utah Faces an 'Environmental Nuclear Bomb'*, N.Y. TIMES, June 8, 2022, at A1.

Great Salt Lake teeters on the brink of collapse. If it dies, so too will a keystone ecosystem of hemispheric importance.[2] The habitability of Utah's Wasatch Front, currently home to more than 2.6 million people (and rapidly growing), rides on the trajectory of the lake. This crisis is of existential proportions and is a long time coming. However, the impacted community is just beginning to understand the stakes at issue, as well as its own role in the lake's future. While the environmental crisis facing the lake has been decades in the making, stakeholders now have only years to act and avert catastrophe.[3]

In 2022, the average water levels of Great Salt Lake reached a record low.[4] The lake shriveled to about half its baseline size, as ten feet of lake elevation evaporated into the thin Great Basin air. The lake retreated from its shorelines, leaving miles of exposed lakebed and reconnecting former islands to the mainland. While the lake, even by its name, commands a sense of greatness, its retreat signals a profound failure of environmental stewardship.[5]

Rather, the communities within Great Salt Lake's watershed have siphoned off the inflowing rivers that bring life and renewal to the lake. The value of allowing the water to reach the lake, for the sake of the lake itself, has come to issue for the first time. Legally speaking, water reaching Great Salt Lake was considered wasted until a few years ago. Recent revisions to Utah's water law—including the redefinition of "beneficial use" to allow for conservation, exemptions to "use it or lose it" rules for conservation transfers, and modifications to instream flow requirements—signal a pivotal shift toward prioritizing the lake's ecological preservation.[6] As the lake's downward spiral

2. A "keystone ecosystem" is one that "provid[es] resources, shelter or 'goods and services' crucial for other species." J. Tews et al., *Animal Species Diversity Driven by Habitat Heterogeneity/Diversity: The Importance of Keystone Structures*, 31 J. BIOGEOGRAPHY 79, 86 (2004). Great Salt Lake is often referred to as a keystone ecosystem. BENJAMIN W. ABBOTT ET AL., EMERGENCY MEASURES NEEDED TO RESCUE GREAT SALT LAKE FROM ONGOING COLLAPSE 3 (2023).

3. *See* GREAT SALT LAKE STRIKE TEAM, GREAT SALT LAKE POLICY ASSESSMENT: A SYNTHESIZED RESOURCE DOCUMENT FOR THE 2023 GENERAL LEGISLATIVE SESSION 7 (2023), https://gardner.utah.edu/wp-content/uploads/GSL-Assessment-Feb2023.pdf [https://perma.cc/ZM77-5C9J].

4. *Id.*

5. *See* ABBOTT ET AL., *supra* note 2.

6. S.B. 277, 65th Leg., Gen. Sess. (Utah 2023); H.B. 118, 62d Leg., Gen. Sess. (Utah 2017); H.B. 33, 64th Leg., Gen. Sess. (Utah 2022); *see also* Brigham Daniels, Elisabeth Parker & Karrigan Börk, *Utah's Legal Risks and the Ailing Great Salt Lake* 1, 4 (Univ. of Utah Coll. of L. Rsch. Paper No. 583, Jan. 2024).

became more obvious, and as the shorelines expanded deeper into the lake's footprint, it became impossible to ignore how much the community needed the lake—a dying lake endangers the region's public health, economy, and ecosystem.[7]

The consequences of the lake's continual decline are profound, implicating complex ecological networks in ways that are not easy to predict. Perhaps most pressingly, toxic metals such as arsenic, otherwise held safely in place under the lake's waters, are exposed as the lake recedes. Those contaminants are the product of millennia of naturally occurring erosion and a century-and-a-half of human-generated pollutants. They are being whipped up along with the dry sands of the exposed lakebed and carried to the 2.6 million residents of the Wasatch Front.[8] This toxic dust poses an "immediate health risk to all residents along the Wasatch Front."[9] The dust brings with it increased risks of respiratory and cardiovascular disease, immune system suppression, cerebral and circulatory issues, and cancer.[10]

Further consequences involve severe harm to ecosystem health and services, both regionally[11] and across the Western Hemisphere.[12] Recreation and mineral production at the lake will likewise suffer adverse effects.[13] A degraded lake reduces lake-effect snowfall and increases dust deposition on the snowpack,[14] impacting the Olympics-worthy ski industry and

7. ABBOTT ET AL., *supra* note 2, at 1.

8. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

9. *Id.*

10. Hamidreza Aghababaeian et al., *Global Health Impacts of Dust Storms: A Systematic Review*, ENV'T HEALTH INSIGHTS, 2021, at 2; ECONORTHWEST, ASSESSMENT OF POTENTIAL COSTS OF DECLINING WATER LEVELS IN GREAT SALT LAKE 45–52 (2019) (prepared for the Great Salt Lake Advisory Council); Dale W. Griffin & Christina A. Kellogg, *Dust Storms and Their Impact on Ocean and Human Health: Dust in Earth's Atmosphere*, 1 ECOHEALTH 284, 284 (2004); Wayne Wurtsbaugh et al., *Impacts of Water Development on Great Salt Lake and the Wasatch Front* 4 (2016).

11. *See* GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 5.

12. *Gov. Cox Declares 2021 as Year of the Shorebird at Great Salt Lake*, UTAH DEP'T OF NAT. RES.: DIV. OF WILDLIFE RES.: NEWS (May 12, 2021, 9:48 AM), https://wildlife.utah.gov/news/utah-wildlife-news/1182-cox-declares-2021-year-of-shorebird-great-salt-lake.html [https://perma.cc/98CT-CTYY].

13. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 5.

14. *Id.* at 29.

recreational economy across Northern Utah.[15] This, of course, threatens major sectors of the state's economy.[16]

Capturing the community's anxiety about the disaster it had created and the zeitgeist of the time, Joel Ferry, then a state legislator and currently Director of Utah's Department of Natural Resources, characterized the devastating consequences of a drying lake as a "potential environmental nuclear bomb."[17]

The question asked by everyone grappling with the lake's collapse has been different versions of, What can be done?[18] Indeed, the discourse surrounding the lake over the past several years has betrayed a deep existential angst. At the same time, however, the question also proves that hope is not gone: There might be a way out. Beyond that, it's clear that real effort and resources are being invested in the lake—the lake's steward community is not merely eulogizing.

The story of Great Salt Lake is significant in its own right, given its role in the ecological, environmental, and economic health of the American West.[19] But it is also demonstrative of similar crises accelerated by climate change.[20] Elsewhere, as in Northern Utah, many stand in the shadows of looming environmental crises and ask, in increasingly desperate tones: What is to be done?

Unsurprisingly when searching for what can be done, many look first to environmental law—particularly the suite of major

15. Emma Keddington, *Ski Resorts Raise Awareness as Great Salt Lake Crisis Threatens 'Greatest Snow on Earth'*, DESERET NEWS (Feb. 26, 2023, 11:50 AM), https://www.deseret.com/utah/2023/2/26/23613088/great-salt-lake-drying-threatens-greatest-snow-on-earth [https://perma.cc/6Y7L-NLC2].

16. *See id.* (discussing a University of Utah professor's presentation that found "a single inch of snowfall is worth $2.8 million in Utah's $1.6 billion ski tourism industry").

17. Flavelle, *supra* note 1.

18. *E.g.*, Sara E. Grineski et al., *Harmful Dust from Drying Lakes: Preserving Great Salt Lake (USA) Water Levels Decreases Ambient Dust and Racial Disparities in Population Exposure* 7 ONE EARTH 1056 (2024); Alexander Petersen, *The Great Salt Lake: An Environmental Doomsday*, *in* 17 VOICES OF USU: AN ANTHOLOGY OF STUDENT WRITING 238 (2023); Margaret Osborne, *Drying Great Salt Lake Dust Could Expose Millions to Toxic Arsenic-Laced Dust*, SMITHSONIAN MAG. (Jan. 13, 2023), https://www.smithsonianmag.com/smart-news/drying-great-salt-lake-could-expose-millions-to-toxic-arsenic-laced-dust-180981439 [https://perma.cc/X3DX-6LBF]; Addison Graham, *Will Mormons Save the Great Salt Lake?*, WASH. POST (Feb. 14, 2023, 7:48 AM), https://www.washingtonpost.com/opinions/2023/02/14/mormons-save-salt-lake [https://perma.cc/3QNS-FAY7]; *see also* GREAT SALT LAKE STRIKE TEAM, *supra* note 3.

19. *See* GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE (Bonnie K. Baxter & Jami K. Butler eds., 2020).

20. *See* discussion *infra* Section I.A.

federal environmental legislation introduced a half-century ago. The Clean Air Act, Clean Water Act, and Endangered Species Act are often heralded as exactly the strong medicine that may be suited to such dramatic environmental problems. After all, these statutes have become leviathan in American environmental and administrative law.[21]

This Article, however, looks at the deteriorating conditions of Great Salt Lake as a case study for a broader need for legal *innovation* to local environmental crises embedded in our shared landscapes.[22] This is because, in short, the pantheon of major federal environmental statutes alone matches up poorly to the problem of climate-driven environmental crises. The changing environmental and politico-legal realities of the twenty-first century, we argue, demand looking to more than the core statutes and doctrines of environmental law for rescue. Real solutions also require searching beyond litigation-oriented environmental advocacy entirely. Warding off environmental catastrophes like a drying Great Salt Lake will require measured cooperation, especially at the state level, to craft new, fine-tuned legal tools and policy regimes.

This Article, in addition to considering at length the role that existing federal environmental law might play—for good or for ill—in the future of Great Salt Lake, considers some lessons for legal innovations that have emerged in the public conversation and the ongoing attempt to adequately address the lake's plight. We use the case study of Great Salt Lake to broadcast, in general terms, lessons that we argue ought to guide the next generation of environmental law.

To do this, we begin in Part I by defining the kinds of localized environmental crises relevant to this Article and providing some background on the subject of our case study—the dire outlook of Great Salt Lake. While the lake's conditions have received national (and even international) attention, we hope to provide a more local perspective of both the environmental and political context in which Great Salt Lake is situated.

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21. *See* discussion *infra* Part II.

22. The local environmental crises most analogous to Great Salt Lake's case study are environmental problems that threaten or cause significant enough harm so that both addressing or failing to address them would likely significantly upend social, environmental, political, and economic order. We provide more detail and context to what we mean by "local environmental crises" in Part I below.

In Part II, we scour the pantheon of environmental law in search of the best feasible tools to address the problem of a drying Great Salt Lake. We begin by examining the Clean Water Act, which ostensibly promises to offer some aid to the drying lake. We find that, in large part due to its history as a product of a *quality* crisis rather than *quantity*, the Clean Water Act is unable to sufficiently address the challenges facing Great Salt Lake today. We then look at other statutes that might be shoehorned to address the problem, focusing on the Clean Air Act and Endangered Species Act.

We find that the legal tools examined in Part II, while not without merit, face challenges in fully addressing the complex issues facing Great Salt Lake, offering little more than to apply pressure on policymakers by leveraging real harm on Utah's autonomy, development, and economy. To bring these statutes to bear, environmental litigants would have to press the limits of coercive federalism and try to *force* state action by both dialing up the pain felt locally and threatening full-scale regulatory attacks on the state.

One might hope that resorting to inflicting pain on the state through litigation might motivate state policymakers to address the problem of getting more water to the lake. However, given increasingly hostile state-federal politics, this might only risk bringing to a full halt the current momentum in the state legislature. While litigation remains a valuable tool, we argue that its application requires careful consideration to avoid unintended consequences that might impede state and local efforts and even cooperation with the federal government.

Thus, in Part III, we turn to consider the current trajectory of state *policymaking* on Great Salt Lake. We highlight the avenues that the legislature has started down to attempt to save the lake, which cut against the grain of likely stereotypes surrounding the state's conventional "red state" regulation,[23] and comment on the implications of the state's transparent disdain for the coercive pressure litigants and the federal government might place on the state to compel the state to act

23. Red states refer to states, like Utah, that are dominated by the Republican Party. Those dominated by the Democratic Party are, in contrast, referred to as blue states. Increasingly, environmental policy has played out quite differently in states dominated by differing political parties. *See* DAVID KAROL, RED, GREEN, AND BLUE: THE PARTISAN DIVIDE ON ENVIRONMENTAL ISSUES (2019) (exploring the ways that environmental policy has become increasingly partisan, including among states dominated by a single political party).

on Great Salt Lake (the former admittedly seeming much more likely than the latter, currently, as the Trump Administration returns to power). Additionally, we examine instances where state action has fallen short of adequately addressing the lake's urgent needs, illuminating a systemic inertia and even hesitancy among some state governments, to implement the bold, transformative measures required to effectively combat the lake's potential collapse.

We then turn, in Part IV, to reflect on what the case study of the crisis facing Great Salt Lake might teach us about handling localized environmental crises generally. Here, we argue for a multifaceted approach that leverages the strengths of various governance levels. We highlight the potential for local- and state-level innovation and contend that states must have a place at the table of environmental policy innovation in the era of climate-driven environmental crises, while recognizing the continued importance of federal environmental law and oversight. Most importantly, we urge environmental advocates and interest groups to exercise restraint and caution in waging litigation battles—litigation strategies, even if well-intentioned, risk burning political capital and policymaking goodwill.

In Part IV, we explore the benefits and limitations of such litigation-oriented strategies, urging a balanced approach that doesn't unduly prioritize adversarial tactics and thereby threaten a full halt to legislative processes, while also acknowledging their value in certain contexts. Finally, we argue that the future of environmental law lies in cooperative visions of stakeholder engagement and legislation, rather than simply tugging on the sleeve of the federal government or courts to intervene in the delicate work of addressing local environmental crises.

I. THE CRISIS FACING GREAT SALT LAKE

A. Defining Local Environmental Crises

In this Article, we look to Great Salt Lake as a microcosm of a much larger collection of environmental crises. Like the "environmental nuclear bomb" unleashed by a declining Great Salt Lake, these local environmental catastrophes are of such magnitude they threaten to upend regional social, environmental, political, or economic order. For the most part,

today's environmental challenges differ from the problems of yesteryear as a matter of scale, frequently exacerbated by escalating hazards stemming from global climate change.

The most difficult environmental problems are those that pose threats both in terms of their fallout and their difficulty to address. If left unchecked, they would necessarily result in ecological destruction and its cascading impacts on human communities. At the same time, these problems present another layer of fragility. Approaching them creates political thickets that might threaten the careful balance of stakeholder interests, and holding environmental crises at bay, in itself, presents intractable problems because the solutions come—if at all—at a steep price and only with harsh tradeoffs.

It is worth thinking about such local environmental crises as a class of environmental policy problems. For example, it does not take much to see the throughline between the environmental crisis facing Great Salt Lake and those facing other saline lakes (e.g., Owens Lake, Walker Lake, Mono Lake, Lake Urmia, and the Aral Sea).[24] Saline lakes are terminal in nature, meaning they are endpoints of closed watershed basins and lack a natural outlet.[25] Since evaporation is the only outlet, terminal lakes are significantly impacted by changes to water inflow and are at the mercy of upstream actions such as water diversions, groundwater pumping, and climactic variations,[26] which can lead to irreversible desiccation (drying out) without proactive intervention.[27] Almost all terminal lakes are suffering and declining at "alarming rates" worldwide.[28] Indeed, terminal lakes are in such bad shape—it makes one wonder whether the condition facing all terminal lakes is in fact, *terminal*.[29]

But the problem is not limited to the future of water bodies like Great Salt Lake. Consider just a sampler of local

24. *See generally* AECOM, CONSEQUENCES OF DRYING LAKE SYSTEMS AROUND THE WORLD 5 (2019) (prepared for the Great Salt Lake Advisory Council).

25. Sue McClurg & Rita Schmidt Sudman, *Remnants of the Past: Management Challenges of Terminal Lakes*, WATER EDUC. FOUND. (Jan. 2005), https://www.watereducation.org/western-water-excerpt/remnants-past-management-challenges-terminal-lakes [https://perma.cc/KG6W-UCGD].

26. *Desert Terminal Lakes Restoration Fund*, NAT'L FISH & WILDLIFE FOUND., https://www.nfwf.org/programs/walker-basin-restoration-program/desert-terminal-lakes-restoration-fund [https://perma.cc/C6V9-KKP3].

27. *See* AECOM, *supra* note 24.

28. *Id.* at 13.

29. In recent legislation, Congress has defined terminal lakes as generally "at risk." 16 U.S.C. § 3839bb-6(a)(3).

environmental crises, frequently exacerbated by climate change, to illustrate our point: Extreme weather events are multiplying in prevalence and magnitude worldwide, such as longer and hotter heatwaves,[30] devastating wildfires,[31] large-scale flooding,[32] islands swallowed by the seas,[33] inundated coastal communities,[34] and worsening droughts.[35] The exact

30. Mark Poynting & Esme Stallard, *How Climate Change Worsens Heatwaves, Droughts, Wildfires and Floods*, BBC (June 17, 2024), https://www.bbc.com/news/science-environment-58073295 [https://perma.cc/2A5M-ZCG8] (providing an overview of climate disasters); *see also* Michael Burger et al., *The Law and Science of Climate Change Attribution*, 45 COLUM. J. ENV'T L. 57, 101–02 (2020) ("[A]n increase in the magnitude, frequency, and duration of extreme temperature events is a direct and foreseeable consequence of a warming climate."); *2023 Confirmed Heat Deaths Match Record High in Maricopa County*, MARICOPA CNTY. (Oct. 19, 2023), https://www.maricopa.gov/CivicAlerts.aspx?AID=2830 [https://perma.cc/6YN7-NR2C].

31. *See* Steven L. Spencer II Major, *More Than a Rake: Toward a Statutory Solution for Wildfire Threats to Department of Defense Installations*, 62 NAT. RES. J. 79, 80–81 (2022); Julia Jacobo & Dan Peck, *Record-Breaking Wildfires Have Occurred All Over the Northern Hemisphere During 2023, New Report Finds*, ABC NEWS (Sept. 13, 2023, 8:07 PM), https://abcnews.go.com/US/record-breaking-wildfires-occurred-northern-hemisphere-2023-new/story?id=103169036 [https://perma.cc/DVJ5-U8JY].

32. *See* Sara Mehryar & Swenja Surminski, *National Laws for Enhancing Flood Resilience in the Context of Climate Change: Potential and Shortcomings*, 21 CLIMATE POL'Y 133, 133 (2020) (citations omitted) ("Floods affect more people around the world than any other hazard. In many places across the world risk levels are increasing, with climate change and socio-economic development influencing risk patterns and exposure."); *2022 Pakistan Floods*, CTR. FOR DISASTER PHILANTHROPY (last updated Sept. 6, 2023), https://disasterphilanthropy.org/disasters/2022-pakistan-floods [https://perma.cc/2PNB-RDQM] .

33. *See generally* Michael Oppenheimer et al., *Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, *in* THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE: SPECIAL REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 321 (Ayako Abe-Ouchi et al. eds., 2022). *See also* Trevor Nace, *New Study Finds 8 Islands Swallowed by Rising Sea Level*, FORBES (Sept. 9, 2017, 1:45 PM), https://www.forbes.com/sites/trevornace/2017/09/09/new-study-finds-8-islands-swallowed-by-rising-sea-level/?sh=232a58425283 [https://perma.cc/PM9L-WAB2].

34. *See* Pac. Coastal & Marine Sci. Ctr., *Coastal Climate Impacts*, U.S. GEOLOGICAL SURV. (June 27, 2022), https://www.usgs.gov/science/coastal-climate-impacts [https://perma.cc/V37B-C8DW] (analyzing the impacts of sea-level rise due to climate change around the Pacific and Arctic Oceans and stating, "[i]n California alone, roughly half a million people and $100 billion worth of coastal property are at risk during the next century").

35. *See* Reed D. Benson, *Federal Water Law and the "Double Whammy": How the Bureau of Reclamation Can Help the West Adapt to Drought and Climate Change*, 39 ECOLOGY L.Q. 1047, 1051–53 (2012) (discussing the Bureau of Reclamation's role in managing water resources in the arid Western United States); Casey Clowes et al., Tessa Hustead & Daniel Kolomitz, *Thirsty for a Solution: Promoting More Efficient Water Use in the West*, 20 U. DENV. WATER L. REV. 65, 69

manifestation of many of the environmental crises, of course, varies greatly by locale and by type. Thus, addressing local environmental crises demands ongoing, fine-tuned, scale-attentive policy solutions. As the exceptional becomes the norm, understanding environmental crises and strategies to address them is critical as climate change continues to supercharge these crises globally.

B. What Makes Great Salt Lake a Difficult Environmental Crisis

Great Salt Lake, pushed to the brink of collapse, has become a "potential environmental nuclear bomb."[36] Like many of the most difficult local environmental crises, the drying of Great Salt Lake threatens to upend existing social, environmental, political, and economic order. In this Section, we provide the background of Great Salt Lake to emphasize the severity of the problem and to provide a case study in the nature of the sort of environmental crises that receive our attention in this Article.

1. What Might Be Lost

Great Salt Lake is a paradox.[37] It sits in an arid climate and feeds off three rivers to make "America's Dead Sea." Yet, despite its terminal nature and salinity levels between two to nine times

(2016) (examining the main policy factors that contribute to water scarcity issues in the Southwest and stating, "[c]limate change presents a unique challenge to water use and management in arid climates, because dry regions are already vulnerable to irregular water supplies and other inconsistencies that may be amplified by the climate phenomenon"); *Drought In the Colorado River Basin*, U.S. GEOLOGICAL SURV., https://labs.waterdata.usgs.gov/visualizations/OWDI-drought/en/index.html [https://perma.cc/F8NA-WU5W]; *see also* Jada F. Garofalo, Note, *Toward Holism: Aligning the Science and Policy of Recovery Planning for the Endemic Fishes in the Upper Colorado River Basin*, 42 ENVIRONS: ENV'T L. & POL'Y J. 147, 160–66 (2019) (discussing how climate change threatens the Colorado River's temperatures and flow rates, which in turn threatens the recovery and vitality of fish species in the Upper Basin of the Colorado River).

36. Flavelle, *supra* note 1 (quoting a Republican state lawmaker).

37. Robert W. Adler, *Toward Comprehensive Watershed-Based Restoration and Protection for Great Salt Lake*, 1999 UTAH L. REV. 99, 101–03.

saltier than the ocean,[38] Great Salt Lake is "very much alive."[39] Positioned as the largest saline lake in the Western Hemisphere and the eighth-largest terminal lake in the world,[40] at average historic water levels, the lake is 75 miles long and 35 miles wide,[41] larger than the states of Rhode Island and Delaware.[42] The misnomer that the lake is dead is refuted by the fact that it has "regional and hemispheric biologic importance"[43] and is a keystone ecosystem throughout the Western Hemisphere.[44]

Great Salt Lake and its ecosystem provide food, breeding grounds, and habitat for more than 10 million migratory birds from 338 species annually.[45] The lake—including its shoreline, islands, and extensive wetlands—serves as a critical ecological hub in the Pacific Flyway between North and South America.[46] The lake's ecological role in the migratory flyway is increasingly significant with the decline of other terminal lakes in the region.[47] Great Salt Lake's brine shrimp and brine flies provide a valuable food source to these millions of birds annually.[48] Furthermore, brine shrimp harvested from Great Salt Lake are instrumental in sustaining aquaculture industries across the

38. *Great Salt Lake*, UTAH DEP'T OF NAT. RES. STATE PARKS, https://stateparks.utah.gov/stateparks/wp-content/uploads/sites/26/2015/02/GSL-Ed-packet.pdf [https://perma.cc/99DQ-WSL9]; *Saltiest Pond on Earth*, NASA EARTH OBSERVATORY, https://earthobservatory.nasa.gov/images/84955/saltiest-pond-on-earth [https://perma.cc/4PKJ-STM6] ("The Dead Sea has a salinity of 34 percent; the Great Salt Lake varies between 5 and 27 percent. Earth's oceans have an average salinity of 3.5 percent.").

39. Bonnie K. Baxter, *Great Salt Lake Microbiology: A Historical Perspective*, 21 INT'L MICROBIOLOGY 79, 92 (2018).

40. AECOM, *supra* note 24.

41. *Great Salt Lake*, UTAH DIV. OF WATER RES., https://water.utah.gov/great-salt-lake [https://perma.cc/Y5EZ-N4HU].

42. U.S. GEOLOGICAL SURV.: U.S. DEP'T OF THE INTERIOR, THE GREAT SALT LAKE 2 (W. R. Hassibe & W. G. Keck eds., 1991), https://pubs.usgs.gov/gip/70039229/report.pdf [https://perma.cc/AA9Z-J9K2].

43. *Great Salt Lake Hydro Mapper: Biology*, U.S. GEOLOGICAL SURV., https://webapps.usgs.gov/gsl/characteristics/biology.html [https://perma.cc/DM8J-RAZV].

44. ABBOTT ET AL., *supra* note 2; *see also* GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE, *supra* note 19 (giving the first comprehensive overview of current Great Salt Lake biology).

45. GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE, *supra* note 19, at 40; *see also* Wayne A. Wurtsbaugh & Somayeh Sima, *Contrasting Management and Fates of Two Sister Lakes: Great Salt Lake (USA) and Lake Urmia (Iran)*, WATER (Sept. 2022) at 9.

46. *Great Salt Lake*, *supra* note 41.

47. *Id.*; *see also* Adler, *supra* note 37, at 111–14.

48. *Great Salt Lake Hydro Mapper: Biology*, *supra* note 43.

globe.[49] The lake's brine shrimp industry "helps feed tens of millions of people around the world."[50]

Great Salt Lake also underpins a critically important regional ecosystem and offers indispensable benefits to local communities.[51] Over 2.6 million residents—more than 80 percent of Utah's population—live between Great Salt Lake and the Wasatch Mountain range, an area referred to as the Wasatch Front.[52] The lake is a significant economic driver, generating an estimated $1.69 billion to $2.17 billion annually from varied activities directly related to the lake, including the brine shrimp industry, mineral extraction, and recreation, providing thousands of jobs in the process.[53]

More remotely (but no less importantly), Great Salt Lake also plays a pivotal role in the regional hydrological system, notably influencing snowpack through its distinct lake-effect precipitation,[54] a phenomenon that has both ecological and meteorological implications. Snow related to lakes, "lake effect" snow, prolongs the ski season by an additional five to seven weeks[55] and actively influences the region's water cycle.[56] Alarmingly, scientific modeling underscores the gravity of the

49. Kim S. Colton, *Toward Sustainable Seafood: The Great Salt Lake's Brine Shrimp Harvest*, 33 NAT. RES. & ENV'T 22, 22 (2018); *Brine Shrimp Officially Named Utah's State Crustacean*, UTAH DIV. OF WILDLIFE RES. (Mar. 20, 2023, 9:40 AM), https://wildlife.utah.gov/news/utah-wildlife-news/1608-brine-shrimp-officially-named-state-crustacean.html [https://perma.cc/R9DW-CB84]; Dan Evans, *How Tiny Brine Shrimp from the Great Salt Lake Feed People Around the World*, FOX 13 (Dec. 8, 2023, 6:59 AM), https://www.fox13now.com/news/great-salt-lake-collaborative/how-tiny-brine-shrimp-from-the-great-salt-lake-feed-people-around-the-world [https://perma.cc/N862-ZPDJ].

50. BRIAN STEED, THE GREAT SALT LAKE STRATEGIC PLAN 3 (2024), https://greatsaltlake.utah.gov/wp-content/uploads/Great-Salt-Lake-Strategic-Plan-1.pdf [https://perma.cc/YC68-QW7J].

51. Marcelle Shoop, *Updating Utah Water Policies for Great Salt Lake*, NAT. RES. & ENV'T 54 (2023); GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE, *supra* note 19; *see also* ABBOTT ET AL., *supra* note 2, at 3–4.

52. *Utah Population 2024*, WORLD POPULATION REV., https://worldpopulationreview.com/states/utah-population [https://perma.cc/WM7R-MVB2]; *see also* Michelle Kaufusi & Dawn Ramsey, *Utah Is Growing . . . and We Have a Plan*, DESERET NEWS (Nov. 30, 2023, 11:00 AM), https://www.deseret.com/opinion/2023/11/30/23981364/utah-population-growth-wasatch-choice-vision [https://perma.cc/Z3BG-AGKW].

53. ECONORTHWEST, *supra* note 10, at 83.

54. Shoop, *supra* note 51.

55. *Great Salt Lake*, UTAH DEP'T OF NAT. RES., https://water.utah.gov/wp-content/uploads/2022/11/Great-Salt-Lake-overview.pdf [https://perma.cc/FG53-DNMT].

56. Shoop, *supra* note 51; *see also* ABBOTT ET AL., *supra* note 2, at 3–4; GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE, *supra* note 19.

situation—Great Salt Lake's desiccation could result in a 50 percent reduction in regional precipitation.

2. Causes of the Lake's Demise

Water inflow to Great Salt Lake has decreased steadily and significantly over the past four decades.[57] This is likely no coincidence considering that over the past forty years northern Utah's mean annual air temperature rose more than 3 degrees Fahrenheit.[58] In 2022, Great Salt Lake dropped to its lowest-ever water level on record.[59] Climate change further complicates the situation by causing more unpredictable precipitation patterns, extended periods of droughts, and elevated temperatures.[60] As a terminal lake, water entering Great Salt Lake remains until it evaporates. Therefore, a decreased inflow of water to the lake will inevitably lead to falling water levels and reduction in size.[61] Human water use, natural variability, and climate warming are responsible for the lake's unprecedented decline.[62]

Human use, primarily in the form of water diversions, plays a significant role in the decline of Great Salt Lake, accounting for 67 to 73 percent of the lake's low elevation, and is the only modifiable factor in the near term.[63] Such diversions include those for agriculture, municipal and industrial use, and mineral extraction. Of these, agricultural water diversions are the

57. PIPER CHRISTIAN ET AL., GREAT SALT LAKE HEALTH AND AIR QUALITY: MONITORING LAKEBED EXPOSURE AND ITS IMPACT ON AIR QUALITY AND ENVIRONMENTAL HAZARDS IN THE GREAT SALT LAKE WATERSHED 2 (2023), https://ntrs.nasa.gov/citations/20230006485 [https://perma.cc/8J94-3VAU]; *see also* GREAT SALT LAKE STRIKE TEAM, *supra* note 3 ("After a peak in 1987 (4,210.4 ft), there has been a clear downward trend in lake elevation.").

58. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 8. Elevated air temperatures lead to a rise in evaporation rates from reservoirs and Great Salt Lake; additionally, successive dry years combined with warmer temperatures "reduce runoff efficiency and streamflow more than would be expected based on precipitation alone." *Id.*

59. STEED, *supra* note 50, at 3; GREAT SALT LAKE STRIKE TEAM, *supra* note 3. Great Salt Lake's annual average elevation level fell to a record-low level of 4,190.1 feet in 2022, with a daily record-breaking low level of 4,188.6 feet on October 27, 2022. *Id.*

60. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 4.

61. STEED, *supra* note 50.

62. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 11 ("[H]uman water use comprises 67–73%, natural variability 15–23%, and climate warming 8–11% of Great Salt Lake's low elevation.").

63. *Id.* at 11.

largest contributor to overall water depletion.[64] Those water diversions, combined with extended drought and climate change, have decreased the area of the lake from the historic average of 1,700 square miles[65] to a historic low of 860 square miles in 2022.[66]

Continued climate change is projected to escalate natural variability, climate warming, and the rate of direct evaporation from Great Salt Lake.[67] Likewise, in warmer and drier years, human water usage and total depletions increase.[68] Experts forecast that increasing temperatures and evaporation will eclipse expected increases in precipitation, leading to additional challenges for the lake.[69]

3. Additional Fallout from Great Salt Lake's Potential Demise

The consequences of a water-starved Great Salt Lake are varied and vast, and some are better understood than others. Yet one point is unequivocally evident: Environmental, public health, and economic devastation lies in store if the lake's unprecedented decline continues. As lake levels have dramatically decreased, the challenges presented by Great Salt Lake's potential collapse have become increasingly evident.

When water levels in Great Salt Lake reached an all-time low in 2022, ecological collapse of the lake began to set in. Salinity levels surged, jeopardizing the ecosystem dependent on brine shrimp and brine fly population.[70] Experts have noted that

64. *Id.* at 13.

65. *Great Salt Lake Water Levels*, UTAH DIV. OF WILDLIFE RES., https://wildlife.utah.gov/gslep/about/water-levels.html [https://perma.cc/77CV-S52K] (last updated Aug. 7, 2023, 11:25 AM) (noting that the U.S. Geological Survey began monitoring the lake in 1875).

66. *Great Salt Lake Hydro Mapper*, U.S. GEOLOGICAL SURV.: UTAH WATER SCI. CTR., https://webapps.usgs.gov/gsl [https://perma.cc/9ME7-ZEFA].

67. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 11.

68. *Id.* at 13.

69. *Id.* at 15.

70. STEED, *supra* note 50. The decline in lake elevation in Great Salt Lake also results in an increase in salinity. Brine shrimp are capable of surviving salinities between 5 and 26 percent, however, salinity levels above 16 percent result in declines in reproduction. ECONORTHWEST, *supra* note 10, at 17–18, 33–34. Likewise, when salinity rises, brine fly populations decrease. Shelly Leachman, *Small Brine Flies Have Big Impacts on Salt Lakes*, UNIV. OF CAL. NAT. RSRV. SYS. (Apr. 17, 2023), https://ucnrs.org/small-brine-flies-have-big-impacts-on-salt-lakes [https://perma.cc/RK8W-D5AE].

a "combined collapse of these two organisms could have catastrophic ecological consequences" for the ten million migratory birds that visit the lake each year.[71] Likewise, the lake's decline also threatens to devastate the brine shrimp industry that feeds millions of people around the world.[72]

Great Salt Lake's record-setting reduction in water levels has also resulted in another casualty—the exposure of more than 50 percent of the lakebed,[73] a desiccated playa[74] about the size of the island of Maui.[75] The exposed lakebed, which contains accumulated contaminants and toxins,[76] creates dust storms as fine lakebed dust is stirred up and becomes airborne.[77] As the lake's water levels have decreased, the "frequency and severity" of dust episodes originating from Great Salt Lake's exposed lakebed have increased.[78] These dust plumes present an "immediate health risk to all residents along the Wasatch Front."[79]

Further, the potential of Great Salt Lake to cause particulate matter pollution is massive. Dried lakebeds are enormous sources of particulate matter pollution, both in terms of $PM_{2.5}$ (fine inhalable particulate matter, typically 2.5 micrometers or less in diameter) and PM_{10} (inhalable particulate matter, typically ten micrometers or less in

71. Lael Gilbert, *Great Salt Lake on Path to Hyper-Salinity, Mirroring Iranian Lake, New Research Shows*, UTAH STATE TODAY (Oct. 5, 2022), https://www.usu.edu/today/story/great-salt-lake-on-path-to-hyper-salinity-mirroring-iranian-lake-new-research-shows [https://perma.cc/95YG-2EU3]; *see also* Wurtsbaugh & Sima, *supra* note 45.

72. STEED, *supra* note 50; *see also supra* Section I.B.1.

73. CHRISTIAN ET AL., *supra* note 57.

74. A playa is a dry, flat, expanse devoid of vegetation, situated at the lowest point of a closed desert basin. The substrate of playas is characterized by stratified fine-grain sediments such as clay, silt, sand, and often includes soluble salts. These landforms are commonly found in intermountain basins across the arid Southwest. *Playas*, U.S. GEOLOGICAL SURV., https://pubs.usgs.gov/of/2004/1007/playas.html [https://perma.cc/5SSL-L3A3] (last updated Dec. 18, 2009); *see also* Reuben Attah et al., *Assessing the Oxidative Potential of Dust from Great Salt Lake*, 336 ATMOSPHERIC ENV'T, Nov. 2024, at 1; Evan Bush, *King of the Playa*, UNIV. OF UTAH COLL. OF SCI., https://science.utah.edu/news/king-of-the-playa [https://perma.cc/JH26-E7NB]; Sarah E. Null & Wayne A. Wurtsbaugh, *Water Development, Consumptive Water Uses, and the Great Salt Lake*, *in* GREAT SALT LAKE BIOLOGY: A TERMINAL LAKE IN A TIME OF CHANGE, *supra* note 19.

75. Carter Williams, *Toxic Dust Hot Spots*, UNIV. OF UTAH COLL. OF SCI., https://science.utah.edu/news/toxic-dust-hot-spots [https://perma.cc/75T5-BXKH].

76. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

77. CHRISTIAN ET AL., *supra* note 57.

78. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

79. *Id.*

diameter).[80] For example, the dry lakebed of what was once California's Owens Lake, fifteen times smaller than Great Salt Lake,[81] is the largest contributor of PM_{10} pollution in the United States.[82]

Exposure to airborne dust, including dust generated from dry lakebeds, has devastating health impacts.[83] Due to their small dimensions, nearly all airborne particle pollution from dust storms—including dust events from Great Salt Lake—can infiltrate the respiratory tract and cause serious health problems.[84]

Great Salt Lake dust not only constitutes a public health hazard for over two million residents but also poses a risk to public welfare. Lakebed dust decreases agricultural production, property values, and even snowpack, "shortening the ski season and disrupting water supplies" in an already arid region.[85] Economic fallout from the lake's decline could cost Utah billions annually and result in thousands of job losses.[86] The declining water levels in Great Salt Lake may trigger consequences through various pathways, several of which compound to produce additional costs.[87] For example, the profitable mineral extraction industry at the lake could cease and indeed, has already experienced negative effects.[88] Recreation at the lake screeched to a standstill as levels dropped, resulting in the closure of the lake's marina.[89]

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80. *Particulate Matter (PM) Basics*, U.S. EPA, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics [https://perma.cc/QM36-VN52] (last updated June 20, 2024); AECOM, *supra* note 24, at 7.

81. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

82. ECONORTHWEST, *supra* note 10, at 29; *see also* AECOM, *supra* note 24, at 34.

83. *See supra* notes 8–10 and accompanying text.

84. *See infra* Section II.B.1.

85. *Great Salt Lake*, *supra* note 55; *see also* ECONORTHWEST, *supra* note 10, at v–vi.

86. ECONORTHWEST, *supra* note 10, at iii (estimating a range from "$1.69 billion to $2.17 billion per year and over 6,500 job losses" and "$25.4 billion and $32.6 billion" over a twenty-year time horizon).

87. *See id.* at 28.

88. UTAH DEP'T OF ENV'T QUALITY: DIV. OF WATER QUALITY, PERMIT ORDER: DENIAL OF WATER QUALITY CERTIFICATION DECISION NO. DWQ-2022-08001 (2022) (denying U.S. Magnesium's "Canal Continuation Project" permit application under its 401 certification process) (on file with Utah Department of Environmental Quality).

89. Ben Winslow, *Last Boats Pulled from the Great Salt Lake Marina*, SALT LAKE TRIB. (Aug. 4, 2022, 9:41 AM), https://www.sltrib.com/news/2022/08/04/last-boats-pulled-great-salt [https://perma.cc/P845-M4MZ].

Dust mitigation is estimated to cost a minimum of $1.5 billion with ongoing expenses of $15 million annually.[90] This estimate could "skyrocket if costs and affected surface area [of the dried lakebed] increase."[91]

Thus, it is clear that pain is to be felt in every corner of the region if Great Salt Lake fails. However, addressing the crises caused by the lake's collapse creates new problems and challenges. In the following Part, we consider the potential applicability of major federal environmental statutes to the environmental crisis facing Great Salt Lake before examining the systemic shortcomings of relying on the mainstays of environmental law to address this crisis.

II. COERCIVE FORCE THOUGH FEDERAL LITIGATION WILL NOT SAVE GREAT SALT LAKE WITHOUT STATE ACTION

Given the environmental crisis facing Great Salt Lake, this Article turns first to the current suite of federal environmental laws for potential solutions. However, we find these laws a strained fit to address the overconsumption of Great Salt Lake's inflows. Further, the primary consequence of these laws would impose significant costs on Utah's autonomy and economy. To the extent that the force of federal law *could* compel positive action, that same force risks provoking severe state backlash, as we discuss in Part IV.

We begin in Section II.A by focusing on the Clean Water Act, which at least in name might seem to have the most to say about Great Salt Lake. We conclude, however, that the Clean Water Act provides very little in the way of on-point policy tools to address Great Salt Lake's crisis. We then discuss two other major federal environmental laws—the Clean Air Act and the Endangered Species Act, in Sections II.B and II.C, respectively. We find that while these laws have a lot more bite to address the symptoms surrounding Great Salt Lake's demise, they do little to provide a cure.

Throughout this Part, we explore not only the legal soundness of particular theories but also the risks that the legal tools might provoke backlash rather than compliance. In doing

90. STATE OF UTAH OFF. OF THE LEGIS. AUDITOR GEN., HIGH-RISK LIST: IDENTIFYING AND MITIGATING CRITICAL VULNERABILITIES IN UTAH, Rep. 2023-10, at 9 n.1 (2023).

91. *Id.*

so, we highlight the ways in which the bet that reliance on these statutes to force state action could backfire. However, we also recognize that these potential challenges do not always negate the value of pursuing these legal strategies. This rebound risk is expounded in Part IV, where we draw out the major lessons in the future of environmental law to be gleaned from the case study of Great Salt Lake.

A. Clean Water Act

When Congress passed the Clean Water Act in 1972,[92] its major objective was to address water pollution.[93] But Great Salt Lake's problem is simply not one of pollution—it is a problem of insufficient water inflows. Because the lake's major water issue is one of water quantity and not water quality, the effectiveness of the Clean Water Act in saving the lake appears limited.

This is not to say that water quantity concerns are completely beyond the reach of the Clean Water Act, but it is also far from the most intuitive uses of the enactment. The Clean Water Act has largely succeeded in accomplishing its goal of protecting the nation's waters from excessive pollution, at least when the pollution at issue is within the scope of the statute.[94] Nonetheless, it is not without limitations. In terms of tools, the Clean Water Act's levers focus almost "exclusively on issues of water *quality*, with few tools to remedy the issues of water *quantity* that are also threatening the health of the nation's waters."[95]

92. 33 U.S.C. §§ 1251–1389. Originally, this statute was titled the "Federal Water Pollution Control Act" and was renamed when Congress passed amendments to the statute in 1977.

93. 33 U.S.C. § 1251(a) (detailing multiple legislative purposes focusing on pollution control).

94. Sackett v. EPA, 598 U.S. 651, 658 (2023) ("By all accounts, the Act has been a great success. Before its enactment in 1972, many of the Nation's rivers, lakes, and streams were severely polluted, and existing federal legislation had proved to be inadequate. Today, many formerly fetid bodies of water are safe for the use and enjoyment of the people of this country."); Erin Ryan, *Federalism, Regulatory Architecture, and the Clean Water Rule: Seeking Consensus on the Waters of the United States*, 46 ENV'T L. 277, 285 (2016).

95. Erin Ryan, *How the Successes and Failures of the Clean Water Act Fueled the Rise of the Public Trust Doctrine and the Rights of Nature Movement*, 73 CASE W. RSRV. L. REV. 475, 477, 477 n.6 (2022) ("The few mentions of 'quantity' in the CWA [Clean Water Act] largely pertain to the amount of lawful or unlawful quantities of pollutants.").

The major Supreme Court case *PUD No. 1 v. Washington Department of Ecology*[96] addressed the water quality and water quantity divide and highlighted the broad overlap between the two. There, the Court called the distinction between water quantity and water quality "artificial" and pointed out that "a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses."[97] That being said, the Court in *PUD No. 1* focused on (and affirmed) the power of a state in including water quantity concerns in a federal permit through the state's review and certification of a federal permit under Section 401 of the Clean Water Act.[98] Following the decision in *PUD No. 1*, some states have attempted to fill the Clean Water Act's water quantity regulatory flexibility by taking meaningful steps to supplement their water quality regulations with state water quantity regulations.[99]

While we do not question that state law and state collaboration with a federal enactment could result in water quantity regulations, implementing water quantity measures without state help is generally a stretch unless a federal project itself is restricting water quantity in a water body (such as a dam).[100] Absent those special circumstances, while the quantity and quality of water are inextricably intertwined, the Clean Water Act "lacks legal mechanisms to ensure that sufficient quantities of water actually remain instream."[101] Thus, the challenges facing Great Salt Lake are more rooted in water quantity than in water quality.

Even though the problems of Great Salt Lake are rooted more in quantity than quality, the ongoing failure to meet state water quality standards might conceivably lead to interventions from the Environmental Protection Agency (EPA) or additional lawsuits from concerned citizen groups, even if the Clean Water

96. PUD No. 1 v. Wash. Dep't of Ecology, 511 U.S. 700 (1994).

97. *Id.* at 719.

98. *Id.* at 704–08, 723.

99. Julie F. Youngman, *Water, Water, Anywhere?: Protecting Water Quantity in State Water Quality Standards*, 94 IND. L.J. 1613, 1622–28 (2019); Robin Kundis Craig, *Climate Change, Regulatory Fragmentation, and Water Triage*, 79 U. COLO. L. REV. 825, 904–05 (2008); Reed D. Benson, *Deflating the Deference Myth: National Interests vs. State Authority Under Federal Laws Affecting Water Use*, 2006 UTAH L. REV. 241, 257–311.

100. *See, e.g.*, Robert W. Adler & Michele Straube, *Watersheds and the Integration of U.S. Water Law and Policy: Bridging the Great Divides*, 25 WM. & MARY ENV'T L. & POL'Y REV. 1, 3–7 (2000) (discussing the quality and quantity divide).

101. Ryan, *supra* note 95, at 478.

Act itself does not provide significant penalties in this situation. The loss of designated uses of a water body and the political challenge of a state failing to meet its own standards for water quality protection pose the most significant issues related to the Clean Water Act.

Although the Supreme Court has recognized the connection between water quantity and water quality, Congress was clear in passing the enactment that it did not want to undermine state water law, the major arbiter of water quantity in Great Salt Lake's basin. In fact, Congress's goals and policy declaration in passing the Clean Water Act call for a cooperative approach in sustaining water quality between federal, state, and local agencies, and also specifically states that "the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired."[102] It went on to add that "the regulation of water *quantity* . . . takes place almost entirely through the vehicle of state water allocation laws," and "no part of the [Clean Water] Act specifically preempts state water allocation laws."[103] This creates a major disconnect between water quality regulation and water quantity management—one that is on full display in the potential of Great Salt Lake. The enactment falls short, and does so explicitly, in protecting waterways that suffer due to a lack of water.

The Clean Water Act has two major sets of regulations that focus on reducing water pollution. The first of these, which serves as the enactment's most robust program, focuses on regulating "point sources," which encompasses most major polluters' release of pollutants directly into navigable waters.[104] The point source program requires many of these polluters to secure permits that limit pollutants to pre-set levels associated with employing specific pollution-reducing technologies (such as filters).[105] While there are regulated industries that add pollutants into Great Salt Lake directly or into its tributaries, the most pressing problem plaguing the lake is too little water, not pollution.

102. 33 U.S.C. § 1251(g).
103. Ryan, *supra* note 95, at 481–82.
104. 33 U.S.C. § 1342.
105. *Id.* §§ 1311–14.

A second program under the Clean Water Act focuses on enforcing state water standards requirements.[106] Under the water quality standards program, the state designates the uses made up of a particular water body, like full immersion recreation, agricultural use, aquatic wildlife, domestic water supply, and so forth. The state then applies numeric or qualitative "water quality criteria" intended to ensure the water body will protect its designated uses.[107] For example, if a state decides that a particular water body should be swimmable,[108] it would apply water quality criteria sufficient to ensure the water was safe for swimming. This might include numeric standards for pollutants and qualitative standards like "no foul smells." States can choose a wide variety of uses and often choose uses protecting culturally or socially valued biodiversity.

Utah has established separate uses for four portions of Great Salt Lake, all protected for "primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain."[109] To protect these designated uses, the state has established only one numerical criterion for only part of the lake, Gilbert Bay, based on the level of selenium found in bird-egg tissue in the bay.[110] The remaining uses are protected by a narrative water quality standard that makes it unlawful to take actions resulting in concentrations of substances that "produce undesirable physiological responses" in desirable aquatic life,

106. Here we provide a brief overview of the two other programs. First, the discharge ban explicitly bars "any addition of any pollutant to navigable waters from any point source," 33 U.S.C. § 1362(12), including everything from chemical wastes or sewage to fill materials. 33 U.S.C. § 1362(6). Under Clean Water Act Section 402, the Environmental Protection Agency (EPA) addresses non-fill pollutants, while the U.S. Army Corps of Engineers has jurisdiction over fill pollutants under Section 404. EPA delegated most Section 402 enforcement to the states, including in Utah, where the state clean water requirements are administered by the Utah Department of Environmental Quality's Division of Water Quality (UDWQ). The Army Corps of Engineers continues to administer Section 404 in most states, including Utah. The second part of the Act, the permitting standards, impose technology-based standards on Section 402 permits, termed National Pollutant Discharge Elimination System permits (NPDES permits). Utah issues a state version of the permits, which complies with EPA requirements (UPDES permits).

107. 40 C.F.R. § 131.3(b) (2024).

108. *See* 33 U.S.C. § 1251(a)(2).

109. UTAH DIV. OF WATER QUALITY, UTAH DEP'T OF ENV'T QUALITY, FINAL 2022 INTEGRATED REPORT ON WATER QUALITY 24–25 (2022).

110. *Id.* at 69.

including water birds and brine shrimp.[111] This narrative standard supplies a partial backstop for the lake's water quality, but it is subject to interpretation and more difficult to use in permitting than a numerical standard. According to Utah Division of Water Quality (UDWQ), these "conflicting interpretations, combined with an additional potential for subjectivity due to scientific uncertainty about the Lake's ecological processes, make[] it more difficult for the regulated community to understand, plan for, and ultimately comply with the Clean Water Act regulations."[112]

The lack of numeric standards for most of the lake has resulted in frequent appeals and occasional litigation surrounding point source permits.[113] UDWQ issued a water quality strategy for Great Salt Lake in 2014, which prioritized development of numeric standards, but it has not yet issued any additional numeric standards.[114] UDWQ has yet to list Great Salt Lake as an *impaired water body*, something that only occurs if the water quality cannot support the lake's designated uses. However, it was prepared to do so in the summer of 2023 before additional precipitation diluted pollutants in the lake to acceptable levels.[115]

Given the dire state of Great Salt Lake, it is difficult to imagine the State of Utah will stop addressing pressure from organizations petitioning to list the lake as impaired. Given that the lake approached a major collapse in 2022, Great Salt Lake is clearly an impaired water body, even if the state has not listed it as one. Additionally, as the lake declines, it becomes increasingly probable that it will be listed as impaired because, as lake water levels decrease, various ecological aspects of the lake suffer.

Still, the major regulatory hammer that would fall once Great Salt Lake is listed as an impaired water body primarily illustrates the ways in which the core requirements of the Clean

111. UTAH ADMIN. CODE r. 317-2-7.2 (2023).

112. UTAH DIV. OF WATER QUALITY, UTAH DEP'T OF ENV'T QUALITY, A GREAT SALT LAKE WATER QUALITY STRATEGY 13 (2014).

113. *Id.* at 14–15.

114. *Id.* at 17.

115. Amy Joi O'Donoghue, *Lawmakers Talk Great Salt Lake and Its Challenging, Complex Nature*, DESERET NEWS (Sept. 12, 2023, 5:19 PM), https://www.deseret.com/2023/9/12/23869904/lawmakers-talk-great-salt-lake-and-its-challenging-complex-nature [https://perma.cc/Z2LU-MW6V].

Water Act align poorly with the problems actually facing Great Salt Lake.

When a water body does not meet the relevant water quality criteria and is listed as impaired, the state must establish a total maximum daily load (TMDL) for the offending pollutants.[116] The TMDL quantifies the total amount of a pollutant entering a water body without exceeding the standards. The amount is then divided among the natural background sources of the pollutant, the nonpoint sources of the pollutant (like agricultural runoff), and the volume of pollution allowed under the point source program listed above.[117]

The problem here is that saving the lake does not *require* reducing water pollution. Trying to reduce and allocate pollution among various sources misses the major point. Yes, insufficient inflows threaten to raise salinity and decrease elevation levels to the point the lake no longer supports designated uses. But regulating pollution in the water basin does not change the fundamentals of the equation. Even if the water flowing into Great Salt Lake had no pollution problems, salinity would still be a major challenge because as a terminal lake, a full lake means a diluted lake and a shriveling lake means a saltier one. Great Salt Lake is salty for the same reason the ocean is salty: The salt that is delivered to the water body as runoff or seep from the lakebed or seafloor stays in the system even after water evaporates.

It is possible Utah could address water quality issues through increased inflows to the lake and water quality standards. For example, California's Water Board is reducing water use on the San Joaquin River and its tributaries to increase water flow and thereby meet water quality standards in the San Francisco Bay by using its water quality, supervisory water rights, reasonable use, and public trust authorities.[118] Washington has taken a similar approach in some cases, and the state's Supreme Court upheld the approach.[119] Such an approach would restore some flows to Great Salt Lake tributaries and dramatically improve water quality and would not stem from a federal dictate or from environmental litigation:

116. 33 U.S.C. § 1313(d).

117. *See* 40 C.F.R. § 130.2(i) (2023).

118. CAL. STATE WATER RES. CONTROL BD., WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY 22 (2018).

119. Pub. Util. Dist. No. 1 v. State, 51 P.3d 744, 747 (Wash. 2002) (en banc).

It would require the state legislature or state agencies to take affirmative action, and such voluntary action is highly unlikely in a state like Utah that has prioritized other concerns over environmental protection.[120]

In short, the Clean Water Act protects the quality of bodies of water, but it alone cannot "ensure that sufficient water remains in a waterway for there to *be* an actual waterway."[121]

B. Clean Air Act

Given the Clean Water Act's shortfall, we turn next to what might well be environmental law's champion: the Clean Air Act. This regulatory framework may prove particularly crucial for the environmental crisis unfolding at Great Salt Lake. The lake's dramatic decline has unveiled more than 800 square miles of exposed lakebed (playa),[122] an expanse nearly ten times larger than the footprint of Salt Lake City.[123] As winds sweep across the region, they mobilize dried sediments of this vast dried lakebed into airborne hazards. The resulting air quality crisis, including the scale and proximity of the exposure to major population centers, threatens communities across the region, marking a particularly troubling chapter in the broader story of declining saline lakes. While dust storms from declining saline lakes are a familiar pattern across the American West,[124] the scale and proximity of Great Salt Lake's exposure to major population centers is particularly alarming.

Because wind-driven emissions from Great Salt Lake's drying lakebed represent a major threat, we consider how the Clean Air Act might be implicated in addressing this crisis. The airborne particulate matter from the exposed lakebed poses significant health risks to the entire Wasatch Front

120. *See* discussion *infra* Section IV.C. For example, the State of Utah has joined lawsuits focused on weakening environmental protections, such as the "good neighbor" rule under the Clean Air Act and presidential monument designations within the state. The state legislature, in its 2024 session, passed bills questioning federal supremacy over state action, particularly when state sovereignty is impinged, and a bill designed to prop up coal-fired powerplants in the state. *See infra* notes 248–253 and accompanying text.

121. Ryan, *supra* note 95, at 483.

122. Williams, *supra* note 75.

123. *QuickFacts: Salt Lake City City [sic], Utah*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/fact/table/saltlakecitycityutah/PST045223?utm [https://perma.cc/4PWY-6TZV] (last updated July 1, 2023) (showing the land area of Salt Lake City as 110.34 square miles as of the last Census in 2020).

124. AECOM, *supra* note 24, at 5, 7.

population.[125] The public health implications are even more acute given the composition of the exposed lakebed itself. Recent scientific analysis has revealed that Great Salt Lake dust carries a particularly dangerous toxic signature, containing elevated levels of arsenic and other heavy metals.[126] When these materials become airborne, they create compounded health risks for the region's population.[127]

Recently, for example, the Utah Office of the Legislative Auditor General warned lawmakers of a potential "federal response," and put a price tag of $1.5 billion for dust abatement.[128] This is, no doubt, a reference to potential Clean Air Act regulation. The gravity of these projections becomes even clearer when considering California's Owens Lake as a parallel case—albeit on a far smaller scale—where similar issues with PM_{10} violations led to federally mandated dust mitigation efforts at a price tag of over $2.5 billion to date. Given that Great Salt Lake's footprint is fifteen times larger than Owens Lake,[129] the projected $1.5 billion dust abatement cost likely significantly underestimates the potential financial burden. The Owens Lake case serves as a stark warning of both the potential financial implications and the very real possibility of substantial Clean Air Act enforcement in the Great Salt Lake region.

The remainder of this Section examines how Utah could face both immediate and long-term challenges under the Clean Air Act framework. While we argue that the estimated costs of Great Salt Lake dust abatement are far too conservative, Utah also faces significant risks from potential non-compliance with the Clean Air Act, particularly if the drying of Great Salt Lake leads to increased dust and air quality violations. These risks emerge from the Clean Air Act's framework for addressing state failures to meet national air quality standards and encompass strict

125. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29 (stating that "dust episodes pose an immediate health risk to all residents along the Wasatch Front"); *see Utah Population 2024*, *supra* note 52.

126. Studies have revealed a range of heavy metals and toxins in Great Salt Lake's dried lakebed. Nine of these substances exceeded EPA's residential Regional Screening Levels (RSLs) for residential exposure, with four of them—arsenic, lithium, lanthanum, and zirconium—also exceeding the more stringent thresholds established for industrial RSLs. KEVIN D. PERRY ET AL., RESULTS OF THE GREAT SALT LAKE DUST PLUME STUDY 55–57 (2019).

127. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29 (discussing the "high concentrations of arsenic" in dust storms generated from the Great Salt Lake's lakebed); *see also infra* notes 145–155 and accompanying text.

128. STATE OF UTAH OFF. OF THE LEGIS. AUDITOR GEN., *supra* note 90.

129. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

regulatory measures that would impact various industries within the state, the imposition of sanctions, and federal implementation plans. The potential consequences range from punitive financial measures to direct federal oversight: Sanctions can include the loss of federal highway funding crucial for Utah's infrastructure and economic development, while a federal implementation would effectively transfer control of air quality management from state to federal authorities. While sanctions aim to incentivize compliance through financial pressure, a federal implementation plan effectively strips Utah of its authority to manage its own air quality and compels Clean Air Act compliance through federally administered regulations.

The gravity of these potential outcomes extends far beyond immediate concerns of dust abatement and poses significant legal and practical consequences for Utah, underscoring the urgent need for Utah's proactive and comprehensive management of this looming environmental crisis. None of these potential regulatory responses will directly get any water to Great Salt Lake. Rather, they are directed toward squeezing state policymakers to try to *coerce* action through the infliction of increasingly aggressive sanctions. While there are concerns about how top-down pressure might affect the cooperative federalism model, the Clean Air Act remains a crucial tool for addressing urgent environmental and public health issues. As we discuss below in Part IV, however, its implementation requires a delicate balance between federal oversight and state-level action. This balance highlights the need for collaborative and innovative approaches to tackle complex challenges like those facing Great Salt Lake.

1. Applicability of the Clean Air Act

To fully understand the Clean Air Act's potential role in addressing Great Salt Lake's crisis, we must examine both the Act's regulatory framework and the devastating toll of the relevant pollutants. Likewise, to fully grasp the nexus between the particulate matter from the lake and potential regulatory actions requires a comprehensive understanding of the Clean Air Act. The basic purpose of the Clean Air Act is to safeguard and improve the nation's air quality to promote and protect public health and welfare.[130] The Act charges EPA to set

130. 42 U.S.C. § 7401(b)(1).

nationwide air quality standards to meet these goals,[131] known as the National Ambient Air Quality Standards (NAAQS).

Under the NAAQS program, EPA has identified six key air pollutants, known as "criteria pollutants": sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$),[132] ozone (ground-level), and lead.[133] The dust storms originating from Great Salt Lake's dried lakebed are a quintessential example of particulate matter pollution. Studies suggest that dust from Great Salt Lake consists of 80 percent PM_{10} (approximately one-seventh the width of a human hair[134]) and 20 percent $PM_{2.5}$ (one-quarter the size of PM_{10}[135]).[136] The implications of these microscopic measurements become clear when considering their capacity to infiltrate human tissue and cause severe health outcomes. These pollutants represent a complex matrix of potential health hazards as Great Salt Lake dust also includes a number of toxic pollutants and heavy metals, including arsenic.[137]

Great Salt Lake has massive potential to cause PM pollution, which is probably the most alarming aspect of the lake's crisis for the surrounding communities. Dried lakebeds are enormous sources of PM pollution. To understand the magnitude of this threat, consider the cautionary tale of what was once Owens Lake, two hundred miles northeast of Los Angeles.[138] After diversions of its water sources for a thirsty Los Angeles, Owens Lake became—and remains—the largest single

131. JULIE R. DOMIKE & ALEC C. ZACAROLI, THE CLEAN AIR ACT HANDBOOK 84 (4th ed. 2016).

132. Particulate pollution is categorized into two sizes: PM_{10} particles are "inhalable particles, with diameters that are generally 10 micrometers and smaller"; $PM_{2.5}$ particles are "fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller." *Particulate Matter (PM) Basics*, *supra* note 80.

133. 40 C.F.R. § 50.16 (2008). For a general overview of the criteria pollutants, see CRITERIA AIR POLLUTANTS, U.S. EPA, https://www.epa.gov/criteria-air-pollutants [https://perma.cc/MY8Z-JHAN] (last updated July 20, 2024).

134. *Particulate Matter (PM) Basics*, *supra* note 80.

135. *Id.*

136. ECONORTHWEST, *supra* note 10, at 50. PM_{10} are particles with an aerodynamic diameter less than 10 micrometers while $PM_{2.5}$ are particles with an aerodynamic diameter less than 2.5 micrometers. *Particulate Matter (PM) Basics*, *supra* note 80.

137. ABBOTT ET AL., *supra* note 2, at 8–9.

138. *Drought, Dust, Flood: Owens Lake and the Los Angeles Aqueduct*, UNIV. OF THE PAC. (Oct. 2023), https://www.pacific.edu/about-pacific/reynolds-gallery/exhibitions/drought-dust-flood [https://perma.cc/4W8E-UHMJ].

source of PM_{10} pollution in the United States.[139] Yet Owens Lake covers just 110 square miles[140]—a stark contrast to Great Salt Lake, which as the largest saline lake in the Western Hemisphere[141] spans an average footprint of 1,700 square miles.[142] At its low point in 2022, more than half of Great Salt Lake's bed was exposed,[143] creating a potential dust source more than seven times larger than Owens Lake's entire footprint.

The implications become even more concerning when examining specific pollution levels. According to EPA, Owens Lake—despite its relatively modest size—emits approximately 300,000 tons of PM_{10} annually, including thirty tons of arsenic and nine tons of cadmium.[144]

The situation becomes even more urgent considering human exposure to airborne lakebed pollution. Great Salt Lake borders the state's most populous corridor, with more than 2.6 million people—over three-quarters of Utah's population—residing within twenty miles of the lake's current and former shoreline.[145] This proximity and population density significantly amplifies the public health and economic risks associated with Great Salt Lake's desiccation.

This crisis becomes increasingly urgent as the lake continues to recede. As Great Salt Lake's water levels have decreased, the "frequency and severity" of dust episodes originating from the lake's exposed lakebed have increased.[146] The surface of the lake's 800 square miles of currently exposed lakebed includes "dust hotspots," or specific areas with an elevated potential to generate dust that can be mobilized and transported during dust events.[147] Currently, dust hotspots constitute approximately 9 percent of the exposed lakebed.[148]

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139. *Air Actions, California: Owens Valley Particulate Matter Plan Q&A*, U.S. EPA, https://19january2017snapshot.epa.gov/www3/region9/air/owens/qa.html [https://perma.cc/K8FN-5JTW] (last updated Feb. 14, 2017); *see also* ECONORTHWEST, *supra* note 10, at 29; *see also* AECOM, *supra* note 24, at 29.

140. AECOM, *supra* note 24, at 29–31.

141. ECONORTHWEST, *supra* note 10, at 1.

142. *Great Salt Lake Water Levels*, *supra* note 65.

143. CHRISTIAN ET AL., *supra* note 57.

144. *Air Actions, California: Owens Valley Particulate Matter Plan Q&A*, *supra* note 139.

145. *See Wasatch Front Central Corridor Study*, WASATCH FRONT REG'L COUNCIL, https://wfrc.org/studies/wasatch-front-central-corridor-study [https://perma.cc/HW3U-ZEE3].

146. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

147. Williams, *supra* note 75.

148. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

Approximately three-quarters of the lakebed is protected by a fragile surface crust that formed as the lake receded.[149] Over time, the proportion of the exposed lakebed with the capacity to generate toxic and harmful dust will grow as the protective surface crust erodes.[150] Once airborne, these particles can travel vast distances, with studies documenting dust transport across hundreds and even thousands of miles.[151] This transforms what might appear to be a localized environmental crisis into a far-reaching threat to communities and ecosystems throughout the Intermountain West and beyond.

The health implications of this expanding crisis cannot be overstated. Great Salt Lake dust—and particulate matter more generally—has devastating health impacts.[152] Due to their small dimensions, nearly all airborne particle pollution from dust storms, including dust events from Great Salt Lake, can infiltrate the respiratory tract and cause serious health problems.[153] Adverse health impacts from dust particles can extend beyond the respiratory system and affect other bodily systems, including the cerebral, cardiovascular, integumentary, circulatory, and immune systems.[154] While no one is spared these health hazards, individuals with a medical history of conditions like diabetes, hypertension, cerebrovascular, or pulmonary ailments face a heightened risk.[155]

The evidence of these health impacts is already emerging in Utah communities. Utah-based studies have identified associations between "adverse health outcomes from dust and increased rates of hospitalization, school absences, and higher rates of death, particularly from respiratory and cardiovascular diseases."[156] According to NASA, Great Salt Lake's dry lakebed

149. Williams, *supra* note 75.

150. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

151. Research demonstrates that dust from North Africa dust storms can travel across the Atlantic Ocean, reaching and substantially elevating $PM_{2.5}$ concentrations in southern Texas, and impacting air quality throughout the American South, Southeast, and East Coast regions. *See, e.g.*, Ayse Bozlaker et al., *Identifying and Quantifying the Impacts of Advected North African Dust on the Concentration and Composition of Airborne Fine Particulate Matter in Houston and Galveston, Texas*, 124 J. GEOPHYSICAL RSCH.: ATMOSPHERES 12282, 12282 (2019).

152. *See* Aghababaeian et al., *supra* note 10.

153. *Id.* at 2.

154. *Id.*

155. *Id.*

156. ECONORTHWEST, *supra* note 10, at 49. Another Utah study found that elevated PM pollutants have also resulted in mortality increases by about 5 percent

presents significant health hazards to nearby populations and could amplify existing disparities in air quality.[157] The majority of Utah's population—approximately two-thirds, or over two million residents—reside in close proximity to Great Salt Lake.[158] Indeed, Salt Lake City directly abuts the lake's footprint. This underscores the urgency of addressing the lake's decline and its potential to exacerbate air quality issues for a substantial portion of the state's residents. Local experts have likewise warned that dust events attributable to receding Great Salt Lake levels harm the public health of Wasatch Front residents.[159] Given that the dust events will become even more common as the lake continues to dry, these health effects will only become more pronounced.[160]

2. Left Unchecked, Great Salt Lake Dust Will Lead to Clean Air Act Violations

Increasing dust episodes from the exposed lakebed will lead to violations of the Clean Air Act, resulting in compulsory and expensive compliance measures depending on the level of noncompliance with air pollution standards.[161] Once EPA sets primary and secondary standards for pollutants,[162] each state must develop and submit a plan that "provides for implementation, maintenance, and enforcement" of both primary and secondary national ambient air quality standards for that pollutant.[163] These plans are known as "state

with an increase in PM_{10} levels of 50 $\mu g/m^2$ [micrograms per square meter] and 16 percent higher if PM_{10} reached levels above 100 $\mu g/m^2$. *Id.*

157. CHRISTIAN ET AL., *supra* note 57, at 2–3.

158. *Wasatch Front Central Corridor Study*, *supra* note 145.

159. GREAT SALT LAKE STRIKE TEAM, *supra* note 3, at 29.

160. *Id.*

161. *Id.*

162. Section 109 of the Act requires EPA to review the scientific data underpinning the standards every five years, and revise the standards, if necessary. 42 U.S.C. § 7409(d). EPA has often exceeded the five-year timeframe in reviewing the standards; however, the deadline has enabled interested parties to force a review of the standards by filing suit. RICHARD K. LATTANZIO, CONG. RSCH. SERV., RL30853, CLEAN AIR ACT: A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 3 (2022).

163. 42 U.S.C. § 7410(a)(1).

implementation plans" (SIPs)[164] that constitute the "framework for each state's program to protect the air."[165]

For each criterion pollutant, the Clean Air Act requires EPA to classify areas of the country as "nonattainment," "attainment," or "unclassifiable" depending on the area's compliance with the relevant NAAQS.[166] Nonattainment areas exceed pollution levels of the relevant NAAQS, and attainment areas have pollution levels below the relevant NAAQS. The attainment status of an area may be redesignated as pollution levels change.[167] The majority of nonattainment areas are organized into classification categories determined by the degree of NAAQS exceedances (e.g., marginal, moderate, serious, severe, extreme nonattainment). Maintenance areas were previously designated as nonattainment areas and subsequently redesignated to attainment by EPA, subject to the implementation of provisions in a maintenance plan.[168] The Act sets SIP requirements and regulations for each classification, which become progressively stricter the more polluted an area is.[169]

EPA considers three areas along the Wasatch Front maintenance areas for PM_{10}.[170] These areas may lose their

164. *See id.* § 7410.

165. *State Implementation Plan (SIP)*, UTAH DEP'T OF ENV'T QUALITY, https://deq.utah.gov/air-quality/state-implementation-plan-sip [https://perma.cc/5KN8-TDXD] (last updated Oct. 6, 2023, 2:03 PM).

166. 42 U.S.C. § 7407(d)(1)(A)(i)–(iii). Following the promulgation of a new or revised NAAQS for any pollutant, states must provide EPA with their initial designations of all areas within their borders. *Id.* EPA is then required to either promulgate the designations or modify the designation and notify the state of its proposed modification and allow at least 120 days for the state to show why the proposed modification is "inappropriate." *Id.* § 7407(d)(1)(B).

167. 42 U.S.C. § 7407(d)(3).

168. *Id.*; *see also* UTAH ADMIN. CODE r. R307-101-2 (2020) (defining a "Maintenance Area" as "an area that is subject to the provisions of a maintenance plan that is included in the Utah State Implementation Plan, and that has been redesignated by EPA from nonattainment to attainment of any National Ambient Air Quality Standard").

169. 42 U.S.C. §§ 7511–7515; LATTANZIO, *supra* note 162, at 4; DAVID R. WOOLEY & ELIZABETH M. MORSS, CLEAN AIR ACT HANDBOOK § 2:15 (34th ed. 2024).

170. These areas include Salt Lake County, Utah County and Ogden City. *Am I in a Non-Attainment Area?*, UTAH DEP'T OF ENV'T QUALITY, https://utahdeq.maps.arcgis.com/apps/webappviewer/index.html?id=dcc4eacb53a942f2a4b74a36ae5ea118 [https://perma.cc/Z9GS-P5W9]. *See also* UTAH ADMIN. CODE r. R307-101-2 (2020) ("(i) Salt Lake County, effective on the date that EPA approves the maintenance plan that was adopted by the Board on December 2, 2015; (ii) Utah County, effective on the date that EPA

maintenance designation if, due to Great Salt Lake dust, they no longer meet the criteria for maintenance area status.[171] Six areas in Northern Utah are designated as nonattainment areas for $PM_{2.5}$, with all six in serious nonattainment.[172]

Even though dust storms are periodic,[173] they will still count toward the area's attainment status. Usually, when monitoring air quality status, recorded air quality data are factored into the determination of an attainment designation.[174] In specific circumstances where certain events—deemed to be "exceptional"—impact air quality monitoring data, resulting in breaches of the NAAQS, states may petition EPA for the exclusion of data influenced by these events.[175] There is little reason to believe—as dust storms become more common due to Great Salt Lake's recession—that this will be a viable loophole for Utah to avoid Clean Air Act consequences associated with Great Salt Lake dust.[176] In fact, the state has already started to

approves the maintenance plan that was adopted by the Board on December 2, 2015; and (iii) Ogden City, effective on the date that EPA approves the maintenance plan that was adopted by the Board on December 2, 2015.").

171. *See* 42 U.S.C. § 7407(d)(3)(A).

172. These six nonattainment areas include: Box Elder County, Davis County, Salt Lake County, Tooele County, Utah County, and Weber County. *Utah Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*, U.S. EPA, https://www3.epa.gov/airquality/greenbook/anayo_ut.html [https://perma.cc/793X-XBAR] (last updated Sept. 30, 2024); *Area Designations: $PM_{2.5}$ State Implementation Plan Development*, UTAH DEP'T OF ENV'T QUALITY, https://deq.utah.gov/air-quality/area-designations-pm2-5-state-implementation-plan-development [https://perma.cc/FR8B-XNGX] (last updated Apr. 2, 2024, 12:18 PM) (mapping the nonattainment areas in Salt Lake City and Provo).

173. Great Salt Lake generates approximately fifteen dust events a year—and potentially more—although "[i]t's hard to know for sure, since the exposed lakebed is so large, and the state doesn't have an extensive monitoring system yet." Leia Larsen, *Here's What the Great Salt Lake's Dust Is Doing to Our Bodies*, SALT LAKE TRIB., https://www.sltrib.com/news/environment/2023/09/19/heres-what-great-salt-lakes-dust [https://perma.cc/2D3J-R3QS] (last updated Sept. 19, 2023, 7:35 AM). Ms. Larsen has reported extensively on Great Salt Lake issues.

174. WOOLEY & MORSS, *supra* note 169, § 1:5.

175. Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68216 (2016) (codified at 40 C.F.R. pts. 50–51).

176. The Act outlines various prerequisites that events must meet to be classified as exceptional. Under these provisions, areas may maintain their attainment designations even when pollutant levels are in exceedance of the NAAQS, provided such emissions are attributable to an exceptional event. An "exceptional event" is an event that: "*affects air quality*"; "*is not reasonably controllable or preventable*"; and "*is an event caused by human activity that is unlikely to recur at a particular location*." 42 U.S.C. § 7619(b)(1)(A) (emphasis added). It is possible for a recurring event to be exceptional, so long as it is a "natural event." § 7619(b)(1)(A)(iii). EPA has some discretion to determine whether

monitor dust emissions by "expand[ing] $PM_{2.5}$ and PM_{10} monitoring around Great Salt Lake."[177] This all points toward the conclusion that the lakebed, unless it is again covered by water, will almost inevitably lead to Clean Air Act violations and nonattainment.

3. The Clean Air Act's Regulation of Great Salt Lake Would Prove Costly

The regulatory consequences of Clean Air Act violations could manifest through multiple pathways: either through EPA intervention or a citizen suit brought under the Act. Should either action occur, Utah would likely face extreme regulatory consequences.[178] However, despite the regulatory pain that might follow, none of those consequences would force Utah to shepherd more water to Great Salt Lake. Among the likely consequences, the most immediate are the regulatory actions addressing the pollution from Great Salt Lake's exposed lakebed. This mandated dust abatement could result in a "federal response" the Office of the Legislative Auditor General estimated would cost $1.5 billion with potential future costs to "skyrocket."[179]

The cost estimates likely understate the actual financial burden Utah could face unless the lake's trajectory changes

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an event is exceptional in nature and therefore exempted. § 7619(b)(1)(A)(iv). In determining whether an event is exceptional, the Clean Air Act requires EPA to adhere to a number of principles, but to give "highest priority" in its consideration to the protection of public health. § 7619(b)(3)(A)(i)–(v). Given the public health risks associated with Great Salt Lake dust discussed above, this bodes poorly for the state if it leans on this exception. Additionally, while the Clean Air Act fails to define "natural event," EPA defined it for purposes of determining whether an event is exceptional. The question of whether Great Salt Lake dust fits this definition would be critical. The regulation states, as follows: A "[n]atural event means an event and its resulting emissions, which may recur at the same location, in which human activity plays little or no direct causal role. For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions." Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68216, 68277 (Oct. 3, 2016) (codified at 40 C.F.R. § 50.1(k)). There is little way around the fact that if the lakebed's conditions are not maintained, EPA would likely consider both the lake dust and wind contributions to the emissions. Finally, any determination must be based on the principle of public health at the highest priority. *See, e.g.*, Nat. Res. Def. Council v. EPA, 896 F.3d 459, 463 (D.C. Cir. 2018).

177. UTAH'S AIR QUALITY, UTAH DIV. OF AIR QUALITY, UTAH DEP'T OF ENV'T QUALITY : 2022 ANNUAL REPORT 50 (2023).

178. *See* discussion *supra* Section II.B.2.

179. STATE OF UTAH OFF. OF THE LEG. AUDITOR GEN., *supra* note 90.

dramatically and quickly. Based on the experience of smaller desiccated lakes in the American West, dust mitigation expenditures could escalate far beyond current projections.[180]

These costs are only the beginning of the regulatory burden Utah will likely encounter if the lake's course remains unaltered. Given that lakebed dust will likely need to be factored into the SIP (perhaps complicating compliance with the NAAQS discussed above), the SIP will almost certainly need to include increased regulations beyond just lakebed dust control.

Looking ahead, three distinct types of regulatory compliance challenges loom on the horizon if dust events continue to impact the Wasatch Front. First, Utah can expect various types of penalties aimed at other regulated parties emitting PM pollutants. Failure to control PM pollution invites more and more aggressive regulation. Second, as discussed above, Utah risks the loss of most federal highway and transit funding,[181] which amounts to hundreds of millions of dollars annually. Third, if the state fails to submit a required revised SIP or fails to revise a denied SIP, EPA has the authority to promulgate a federal implementation plan, which must be enforced by the state at the taxpayer's expense.[182] This means that if Utah does not cooperate with the requirements of the Clean Air Act, the same enactment will require the federal government to devise a plan to bring the state into compliance, thereby threatening state autonomy and inviting deep strains on federalist relations.

The state's response to this regulatory pressure presents a critical choice. However, compliance is not Utah's *only* option in the face of ramped-up federal pressure: The state could also reject the Clean Air Act's cooperative-federalist model by pushing theories of state sovereignty to the limits. As we discuss below, increased regulatory pressure resulting from Clean Air Act enforcement might not necessarily motivate Utah's legislature to allocate more water to Great Salt Lake. Instead, it

180. Amy Joi O'Donoghue & Leia Larsen, *How Owens Lake Became a Disaster and How it Could—But Need Not—Happen to the Great Salt Lake*, SALT LAKE TRIB., https://www.sltrib.com/news/environment/2022/10/10/how-owens-lake-became-disaster [https://perma.cc/6HL8-JJYP] (last updated Oct. 10, 2022, 9:08 PM); *see also* discussion *supra* Section II.B.1.

181. 42 U.S.C. § 7509; *see also Particulate Matter Overview*, UTAH DEP'T OF ENV'T QUALITY, https://deq.utah.gov/air-quality/particulate-matter-overview [https://perma.cc/7PRA-L98E] (last updated Apr. 1, 2024).

182. 42 U.S.C. § 7410(c)(1)(A)–(B).

could prompt lawmakers to explore unorthodox legal theories aimed at limiting federal environmental oversight and asserting greater state autonomy in resource management. This approach, while potentially appealing to advocates of state sovereignty, risks sidelining Great Salt Lake's crisis—and other similar environmental crises—and creating increased regulatory pain in the future.

C. Endangered Species Act

Given the shortcomings and misalignment of both the Clean Water Act and Clean Air Act, we next considered the potential applicability of another core environmental law—one with the proven potential to direct the machinery of government in dramatic ways, the Endangered Species Act (ESA). As Great Salt Lake declines, it becomes increasingly likely that species highly reliant on Great Salt Lake will be listed and, at least in theory, potentially protected by the broad sweep of the Endangered Species Act.

But, as we explore in this Section, the only way that the ESA saves the lake is if the federal government or an enforcing court stretches the statute further than it has ever gone before—and probably out of shape.

Below, we walk through the most relevant sections of the ESA. We start by talking about the listing of species, which, as discussed, triggers protection under the act. We then talk about the two most important regulations under the enactment, starting with regulations that would apply to private actors as well as public actors that harm listed species (Section 9) and particularly onerous regulations that would complicate the actions of the federal government related to Great Salt Lake (Section 7).

1. Prospective Listing of Species Reliant on Great Salt Lake Seems Likely

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation,"[183] and it has decreased extinctions across the United

183. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 180 (1978).

States.[184] However, it does not do so without costs. The Act imposes significant criminal and civil liability for actions that harm protected species directly or indirectly, and it has the potential to impose tremendous costs on regulated parties, including states and federal agencies.[185]

The ESA protects species[186] designated as threatened or endangered under Section 4,[187] a designation made by the U.S. Fish and Wildlife Service (FWS) for non-marine species. Members of the public may petition FWS to list a species, or FWS may propose a listing itself. Over the past decade, species listing has generally been driven by public petitions and subsequent litigation. When FWS receives a petition, the listing process generally takes more than a year.[188] According to the ESA, a FWS determination to list a species is a judgment strictly based on science. The FWS should list a species as endangered if it is "in danger of extinction throughout all or a significant portion of its range"[189] and as threatened if it is "likely to become an endangered species within the foreseeable future throughout all of a significant portion of its range."[190]

In March of 2024, the Center for Biological Diversity, along with Utah conservation groups and individuals that have a long history of advocacy and care for Great Salt Lake, filed a petition to list Wilson's Phalarope, a shorebird that relies on the lake, with FWS.[191] While this petition is under review, it is the first of what could be many listing petitions (and likely subsequent litigation) from private parties. The possible success of this or future petitions is an important factor in evaluating risks

184. *See* PERVAZE A. SHEIKH & ERIN H. WARD, CONG. RSCH. SERV. R46677, THE ENDANGERED SPECIES ACT: OVERVIEW AND IMPLEMENTATION (2021).

185. PROP. AND ENV'T RSCH. CTR., ACCOUNTING FOR SPECIES: THE TRUE COSTS OF THE ENDANGERED SPECIES ACT (Randy T. Simmons & Kimberly Frost eds., 2004), https://www.perc.org/wp-content/uploads/old/esa_costs.pdf [https://perma.cc/7L77-F65W] (reporting on the potential costs imposed by the ESA on parties such as taxpayers, state and local governments, and private landowners).

186. 16 U.S.C. § 1532(16) (defining "species" to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature").

187. *See* 16 U.S.C. § 1533(b)(1)(A).

188. *Id.* § 1533(b)(3)(B); 50 C.F.R. § 424.14(h) (2024).

189. 16 U.S.C. § 1532(6).

190. *Id.* § 1532(20).

191. RYAN CARLE ET AL., CTR. FOR BIOLOGICAL DIVERSITY, PETITION TO THE U.S. FISH AND WILDLIFE SERVICE TO LIST WILSON'S PHALAROPE (PHALAROPUS TRICOLOR) UNDER THE ENDANGERED SPECIES ACT AS A THREATENED SPECIES AND TO CONCURRENTLY DESIGNATE CRITICAL HABITAT, https://biologicaldiversity.org/species/birds/pdfs/Wilsons-Phalarope-Petition.pdf [https://perma.cc/F364-EKBW].

associated with Great Salt Lake because such petitions largely remove the listing process from the influence of state and federal governments.

The more that Great Salt Lake suffers, the greater the chance of a petition succeeding. Even under current conditions, where the lake is just above the levels that caused it to begin to collapse in 2022, a petition to list species highly dependent on Great Salt Lake would have a good chance of succeeding.[192] "The lake qualifies as a hemispheric site of importance for three species of shorebirds . . . . This means that these birds rely upon the lake's resources for survival during their long migrations."[193] Species listed as endangered receive the Act's full protection,[194] while threatened species receive only the protections FWS "deems necessary and advisable to provide for the conservation of such species."[195] In practice, however, threatened species have generally been given the same level of protection as endangered species.[196]

Once a species is protected under the Act, taking actions that might negatively impact the species becomes a difficult and expensive multi-year endeavor. To maintain local control and avoid the challenges associated with managing protected species, states and local governments often take proactive measures to protect imperiled species and ecosystems. These measures aim to prevent species decline and habitat degradation, thereby reducing the likelihood of federal intervention through the Act.[197]

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192. *See* Max Malmquist, *Birds of Great Salt Lake's South Arm Ecosystem Threatened*, AUDUBON (Nov. 4, 2022), https://www.audubon.org/news/birds-great-salt-lakes-south-arm-ecosystem-threatened [https://perma.cc/9MHS-26CK] (explaining that historically Great Salt Lake provides habitat for "50–95% of the North American population of Eared Grebes," and "33–40% of the global population of Wilson's Phalarope[]").

193. *Drought and the Great Salt Lake*, UTAH DIV. OF WILDLIFE RES., https://wildlife.utah.gov/gslep/about/drought.html [https://perma.cc/5C9V-6XAE] (last updated Dec. 19, 2022, 9:48 AM) (discussing risks to Wilson's phalaropes, American avocets, and black-necked stilts).

194. *See* 16 U.S.C. § 1538(a)(1).

195. *Id.* § 1533(d).

196. *See generally* Endangered and Threatened Wildlife and Plants; Regulations Pertaining to Endangered and Threatened Wildlife and Plants, 89 Fed. Reg. 23919 (May 6, 2024).

197. *See generally* Michael Margherita, *Candidate Conservation Agreements and ESA Listing Decisions: Underlying Incentives that Drive Stakeholder Behavior*, 18 VT. J. ENV'T L. 570 (2017).

For example, over the past few decades, the State of Utah has collaborated with other Western states to avoid the listing of the Sage Grouse as an endangered or threatened species.[198] While the costs imposed on Utah to avoid listing amount to millions of dollars a year, these costs are more bearable than the costs imposed on the state and its residents if the Sage Grouse were listed.[199] These costs are detailed fully in the two Sections that follow.

2. Restrictions Triggered by an ESA Listing

Once a species is listed, the key provisions of the ESA's regulations kick in. ESA Section 9 regulates private parties as well as the government, and then Section 7 further limits governmental action.

Section 9 prohibits the "take"[200] of endangered species, which includes harming or harassing species.[201] "Harm" includes "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."[202] The take prohibition applies to private parties, state governments, and the federal government itself.[203] "Congress intended 'take' to apply broadly to cover indirect as well as purposeful actions."[204]

An action "takes" a listed species if it proximately causes the take. This clause requires both "the causal factors and the result to be reasonably foreseeable."[205] Thus, take liability did not attach to Texas's water right permitting decisions where "only a fortuitous confluence of adverse factors caused" water withdrawals to eventually cause whooping crane deaths in an unusual weather year.[206] But the U.S. Forest Service's

198. *Greater Sage-Grouse*, UTAH DIV. OF WILDLIFE RES., https://wildlife.utah.gov/greater-sage-grouse.html [https://perma.cc/DH5P-KFEN] (last updated Oct. 27, 2020, 5:25 PM).

199. *Id.*

200. 16 U.S.C. § 1532(19) (defining "take" under the ESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct").

201. *Id.*; 16 U.S.C. § 1538(a)(1); *see also* 50 C.F.R. § 17.3 (2024).

202. 50 C.F.R. § 17.3 (2024); *see generally* Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687, 715 (1995) (Scalia, J., dissenting).

203. 16 U.S.C. §§ 1532(13), 1538(a)(1)(B).

204. *Babbitt*, 515 U.S. at 704.

205. Aransas Project v. Shaw, 775 F.3d 641, 660 (5th Cir. 2014).

206. *Id.*

permitting of excessive timber harvest did result in take liability for red-cockaded woodpeckers,[207] and state prohibitions on goat hunting resulted in take liability where the excess goats destroyed native endangered bird habitats.[208]

The more foreseeable the harm to endangered species, the more likely that actions will be considered a taking, even when the causal chain is attenuated. For example, the destruction of species' habitats from a myriad of water withdrawals upstream of Great Salt Lake increases foreseeability. The more the lake is drained of its water sources, the more obvious harms to species become. However, more proximate uses of water—such as mining the lake's waters—would raise concerns about foreseeability.

Both private entities and government agencies with some control over private entities could be responsible for takes. For example, if the state permitted private actors to use water that deprived a listed species of its habitat, both the state and the water users could be held responsible for a take.[209]

However, Section 10 provides a permitting process for "taking . . . incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."[210] These "incidental take permits" allow states and private parties to incidentally take listed species if the actor mitigates the take to the maximum extent possible and FWS determines the take "will not appreciably reduce the likelihood of the survival and recovery of the species in the wild."[211] The permittee must prepare an extensive habitat conservation plan for FWS, outlining steps to avoid takes, mitigate harm where unavoidable, and generally pay a fine for any takes.[212]

Section 7(a)(2) requires that "[e]ach Federal agency . . . insure that any action authorized, funded, or carried

207. Sierra Club v. Yeutter, 926 F.2d 429, 432–33 (5th Cir. 1991).

208. Palila v. Haw. Dep't of Land & Nat. Res., 852 F.2d 1106, 1110 (9th Cir. 1988).

209. *See* J.B. Ruhl, *State and Local Government Vicarious Liability Under the ESA*, 16 NAT. RES. & ENV'T 70 (2001); Strahan v. Coxe, 127 F.3d 155, 158 (1st Cir. 1997) (issuing state fishing permits to use particular nets that threatened Northern Right whales amounted to a take); Loggerhead Turtle v. Cnty. Council of Volusia Cnty., Fla., 148 F.3d 1231, 1246 (11th Cir. 1998) (permitting lighting on a beach that drew in sea turtles amounted to a take).

210. 16 U.S.C. § 1539(a)(1)(B). Section 10 also allows "for scientific purposes or to enhance the propagation or survival of the affected species." *Id.* § 1539(a)(1)(A).

211. *Id.* § 1539(a)(2)(B).

212. *Id.* § 1539(a); 50 C.F.R. § 17.22(b) (2024).

out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species."[213] This means that federal agencies must consult with FWS before undertaking any action that "may affect listed species or critical habitat."[214] Through that consultation, FWS will determine whether the federal action at issue "is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat."[215] During the consultation, FWS requires mitigation measures to reduce impacts on listed species to an acceptable level.[216]

Although Section 7 targets "federal actions," it also applies to any private actions authorized or funded by federal agencies.[217] Examples include private landowners who plan to secure a permit to fill wetlands under the Clean Water Act, funding and operating decisions by irrigation companies and even the state water managers that rely on water infrastructure, and Clean Air Act permitting of large industrial polluters. Any of those actions would require compliance with Section 7 by the relevant federal agency.[218] Consultation is a lengthy process. Sections 7 and 9 successfully protect listed species because the consultation and prohibition on takings constrain threatening public and private actions.[219]

3. ESA Listing and Regulation Is Unlikely to Save Great Salt Lake

The ESA's strong regulatory structure seeks to recover threatened and endangered species to healthy population levels by protecting the species and their ecosystems. The Supreme Court set an aggressive approach for interpreting the ESA in *Tennessee Valley Authority v. Hill*, holding the Act "admits of no exception." [220] That opinion goes on to claim that "Congress intended endangered species to be afforded the highest of

213. 16 U.S.C. § 1536(a)(2).
214. 50 C.F.R. § 402.14(a).
215. *Id.* § 402.14(g)(4).
216. 16 U.S.C. § 1536(b)(3)(A).
217. *See id.* § 1536(a)(2).
218. *Id.* § 1536(a)(3).
219. *See id.* §§ 1536, 1539.
220. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 173 (1978).

priorities."[221] The Court then held that the Legislature found an "overriding need *to devote whatever effort and resources were necessary* to avoid further diminution of national and worldwide wildlife resources."[222]

Certainly, the ESA, once triggered, has real teeth. It already constrains water deliveries under California's Central Valley Project and State Water Project, occasionally shuts off irrigation water from the Klamath Project, bars federal oil and gas development in some areas, and constrains water projects throughout the Colorado River Basin.[223]

If Great Salt Lake's continual decline results in a species listing, the presence of listed species in the area would complicate the environmental decision-making and permitting processes significantly. When a lake is more than a thousand square miles, producing results requires extensive effort. This extensive effort might be just what Great Salt Lake needs: forcing water away from users and into the lake.[224]

Although it is unclear precisely how the ESA would interact with Utah's water rights, federal water projects would likely have to reduce or end their diversions and water deliveries to comply with the ESA, as seen during episodes of extreme drought in the Klamath Basin.[225] Under the ESA's dictates and timelines, the state would not have its current flexibility to work aggressively to shape a transition that prioritizes other relevant interests.

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221. *Id.* at 174.

222. *Id.* at 177 (quoting George Cameron Coggins, *Conserving Wildlife Resources: An Overview of the Endangered Species Act of 1973*, 51 N.D. L. REV. 315, 321 (1975) (emphasis added)).

223. *See* CHARLES V. STERN ET AL., CONG. RSCH. SERV., R45342, CENTRAL VALLEY PROJECT: ISSUES AND LEGISLATION 17–21 (2024); Reed D. Benson, *Giving Suckers (and Salmon) an Even Break: Klamath Basin Water and the Endangered Species Act*, 15 TUL. ENV'T L.J. 197 (2002); CHARLES V. STERN ET AL., CONG. RSCH. SERV., R45546, MANAGEMENT OF THE COLORADO RIVER: WATER ALLOCATIONS, DROUGHT, AND THE FEDERAL ROLE 13–15 (2024); Glen Spain, *Dams, Water Reforms, and Endangered Species in the Klamath Basin*, 22 J. ENV'T L. & LITIG. 49, 56 (2007).

224. For an interesting discussion about the ways in which ESA-forced water reallocation can disrupt communities, see Brian C. Chaffin et al., *Resilience, Adaption, and Transformation in the Klamath River Basin Social-Ecological System*, 51 IDAHO L. REV. 157, 168–86 (2015).

225. *See* Michael C. Blumm & Dara Illowsky, *The World's Largest Dam Removal Project: The Klamath River Dams*, 101 OR. L. REV. 1, 23–30 (2022) (discussing the history of conflicts between water users reliant on federal irrigation projects and the water needs of endangered species in the Klamath during the past few decades of drought).

As in the case of the Clean Water Act and Clean Air Act, then, intervention via the ESA assumes that putting top-down pressure on state policymakers would yield positive results and incentivize bringing water to the lake. But, as we discussed above and will below, it would also bring unrealized threats of noncooperation and resistance to the cooperative-federalist model.

III. SAVING GREAT SALT LAKE WITH STATE LEGISLATION

No method identified in the environmental litigation toolbox provides a reliable conduit to change the direction of Great Salt Lake's decline. The challenges arising from Great Salt Lake's collapse demand immediate action. But, as we discuss below in Part IV, environmental litigation, while effective in many instances, carries a risk of backfiring and making it even less likely that Utah's government acts to save Great Salt Lake. Until recently, those working to save the lake on the ground in Utah are frequently not working *with* the Utah Legislature to find politically palatable solutions but are trying to pull the strings of state control through some form of court or federal government intervention. However, in recent years and as detailed below, the state legislature-initiated measures to preserve Great Salt Lake. Still, progress has been uneven and significant challenges remain.

In this Part, we briefly outline Utah lawmakers' response to Great Salt Lake's crisis over the past few years to demonstrate a complex legislative landscape that includes both progress and typical entrenched political resistance, thereby providing a basis for the lessons we outline in the next Part. While Utah—a red state that has traditionally been skeptical of environmental initiatives and interests[226]—has enacted some measures to mitigate the ecological crisis facing Great Salt Lake, it has also exhibited characteristic political intransigence in key areas and,

226. The idea of red states, while common, is the noncontroversial idea that states run by Republicans act differently than blue states run by Democrats. The priorities placed on environmental protection by Republicans differ from those placed by Democrats. *See* Raphael J. Nawrotzki, *The Politics of Environmental Concern: A Cross-National Analysis*, 25 ORG. & ENV'T 286 (2012); Aaron M. McCright & Riley E. Dunlap, *Anti-reflexivity: The American Conservative Movement's Success in Undermining Climate Science and Policy*, 27 THEORY, CULTURE & SOC'Y 100 (2010).

at times, even pursued policies potentially detrimental to the lake's health.

This uneven approach reflects a growing, if inconsistent, recognition among state legislators and policymakers of the urgency and magnitude of the lake's predicament. It is not altogether hard to see why: The differences between the problems of Great Salt Lake compared to run-of-the-mill environmental problems have played an important role in focusing the attention of state decision-makers. Simply put, the far-reaching, society-wide implications of the lake's potential demise far exceed the interests of the usual suspects of environmental interest groups and have compelled action from lawmakers who might otherwise be reluctant to engage with ecological issues. However, this newfound attention has not always translated into effective or consistent policy, as ideological entrenchment and competing interests continue to influence legislative outcomes.

Indeed, while some groundwork had been laid to address water scarcity in the years prior, it was after 2022, when the lake came closest to collapse, that the lion's share of state action occurred. That year marked a watershed of popular attention paid to the lake, with the *New York Times* publishing an article with the headline, "As the Great Salt Lake Dries Up, Utah Faces an *Environmental Nuclear Bomb*."[227] Fallout from Great Salt Lake's collapse, it became clear, would expose the public to toxic dust storms and pose existential risks to the place they called home. While red states and blue states have certainly placed different historic priorities on environmental protection, when it came to the acute challenge of addressing Great Salt Lake's collapse, Utah's red-state status has not pushed confronting challenges facing the lake off the agenda.[228]

The best evidence of Utah's willingness to act to save Great Salt Lake is a panoply of state-led initiatives that have made their way through Utah's state government. During the past two years, Utah has dedicated close to one billion dollars toward initiatives for state-wide water conservation measures.[229] As a part of the initiatives, the Utah Legislature unanimously passed a bill to establish the Great Salt Lake Watershed Enhancement

227. Flavelle, *supra* note 1 (emphasis added).

228. *See supra* note 226 and accompanying text.

229. *Legislative Actions*, GREAT SALT LAKE, https://greatsaltlake.utah.gov/legislative-actions [https://perma.cc/N533-RB95].

Trust to fund future water markets necessary to conserve water and shepherd it to the lake.[230]

The state has also undertaken unprecedented action to transform Utah's water law to facilitate conservation and important uses, like municipal water use. Unfortunately, many of these measures came after Great Salt Lake had very little water to appropriate. One important modification added conservation to the list of purposes that qualify as "beneficial uses" under state water law,[231] which cleared the way for the state to appropriate and keep water within Great Salt Lake and the rivers that feed it.

Additionally, Utah provided an exception for its conventional "use it or lose it" requirement to allow for conservation transfers and leases.[232] This exception, and related changes,[233] have provided Utah with "one of the most dynamic instream flow statutes in the Western United States."[234] Early indications that Utah has chosen to lean on voluntary transfers and positive incentives rather than regulation are probably best seen through its decision to prioritize and appropriate funds for agricultural water optimization projects.[235]

Probably the most significant change that Utah has adopted, however, has been an institutional one—lawmakers created the Office of the Great Salt Lake Commissioner[236] to develop and uphold a strategic plan for the lake and facilitate collaborative efforts among various agencies and stakeholders. The State also bestowed upon the Commissioner authority to

230. H.B. 410, 64th Leg., Gen. Sess. (Utah 2022).

231. S.B. 277, 65th Leg., Gen. Sess. (Utah 2023); H.B. 118, 62d Leg., Gen. Sess. (Utah 2017); H.B. 33, 64th Leg., Gen. Sess. (Utah 2022); *see also* CLYDE SNOW, GREAT SALT LAKE BASIN INTEGRATED PLAN: DRAFT WATER POLICY INVENTORY AND ASSESSMENT (2023), https://water.utah.gov/wp-content/uploads/2023/11/GSLBIP-Work-Plan-Appendix-E-2-Policy-Matrices.pdf [https://perma.cc/KCM5-GYV7].

232. *See* S.B. 277, 65th Leg., Gen. Sess. (Utah 2023).

233. H.B. 33, 64th Leg., Gen. Sess. (Utah 2022).

234. CLYDE SNOW, *supra* note 231, at 1.

235. S.B. 277, 65th Leg., Gen. Sess. (Utah 2023); H.B. 39, 63d Leg., Gen. Sess. (Utah 2020); H.B. 381, 62d Leg., Gen. Sess. (Utah 2018). Agricultural water optimization involves measures and practices that enable the agricultural sector to enhance water efficiency while simultaneously sustaining or boosting agricultural output. *Agricultural Water Optimization Program*, UTAH DEP'T OF AGRIC. & FOOD, https://ag.utah.gov/agricultural-water-optimization [https://perma.cc/5W6V-SP63] (last updated Sept. 10, 2024).

236. H.B. 491, 65th Leg., Gen. Sess. (Utah 2023) (enacting the Great Salt Lake Commissioner Act).

"require a state agency to take action or refrain from acting to benefit the health of the Great Salt Lake."[237]

Other entities outside the Utah Legislature have added to the momentum. Some cities and counties have adopted water conservation plans and passed a variety of initiatives to reduce water use.[238] Utah's public research universities worked together to create a comprehensive Policy Assessment[239] and other tools and resources that outline the risks of a receding lake and solutions to prevent further degradation and ensure rehabilitation of the lake.

One major (and, admittedly, fair) criticism of Utah's efforts is that, while the changes have proved surprisingly robust, the real barometer of success—the amount of water in Great Salt Lake—indicates there is still much work to be done.[240] The state had unprecedented snowfall in 2023, and this certainly gave the

237. *Id.*. *See generally Office of the Commissioner*, GREAT SALT LAKE, https://greatsaltlake.utah.gov/commissioner [https://perma.cc/8T8P-Z54Y].

238. *Office of Regional Development: Water*, SALT LAKE CNTY., https://www.saltlakecounty.gov/regional-development/Environmental-Sustainability/water [https://perma.cc/6GR5-WKJQ]; *see also Water Conservation Plan 2020*, SALT LAKE CITY PUB. UTILS., https://www.slc.gov/utilities/water-conservation-plan-2020 [https://perma.cc/NMK7-NPSV]; *Water Conservation Plan 2021*, SANDY CITY PUB. UTILS., https://ut-sandycity.civicplus.com/1731/Water-Conservation-Plan [https://perma.cc/XMP4-SFJQ]; CITY OF FARMINGTON, WATER CONSERVATION PLAN FIVE YEAR UPDATE (2021), https://conservewater.utah.gov/wp-content/uploads/SubmittedWaterPlans/Farmington-2021.pdf [https://perma.cc/QBG8-GDZG]; *Water Conservation*, HERRIMAN CITY, https://www.herriman.org/water-conservation.php [https://perma.cc/5ZH2-SHGA]; WEBER BASIN WATER CONSERVANCY DIST., WATER CONSERVATION PLAN SUMMARY, (2021), https://weberbasin.gov/Docs/Weber_Basin_Executive_Summary_WCP.pdf [https://perma.cc/BG74-EHC5].

239. GREAT SALT LAKE STRIKE TEAM, *supra* note 3.

240. Utah Governor Spencer Cox explained that although "[e]xtreme drought, climate change and increased demand continue to threaten the Great Salt Lake. We are united in our efforts to protect this critical resource and are taking action to ensure existing flows continue to benefit the lake." *Gov Cox Issues Proclamation Closing Great Salt Lake Basin to New Water Right Appropriations*, OFF. OF THE GOVERNOR (Nov. 3, 2022), https://governor.utah.gov/2022/11/03/gov-cox-issues-proclamation-closing-great-salt-lake-basin-to-new-water-right-appropriations [https://perma.cc/WL9Q-M458]. Brad Wilson, then Speaker of the House, acknowledged that "one season of plenty will not wash away two decades of drought." *Water Legislation and Funding Passed During the 2023 General Session*, UTAH SENATE (Mar. 8, 2023), https://senate.utah.gov/water-legislation-and-funding-passed-during-the-2023-general-session [https://perma.cc/2KVY-7ZR7]. Utah Senate President, J. Stuart Adams, likewise stated that "we still have a long way to go." *Id.*

lake some breathing room.[241] Still, the path forward for a sustainable water regime that provides the lake with consistent and adequate inflows remains, at the moment, less than obvious.

In fairness, there are a number of issues that suggest that the kinds of changes needed by the state are not going to be easily won. For example, following a record-breaking low lake-level elevation year in 2022, during which Great Salt Lake almost collapsed, Utah's Legislature refused to heed the call of scientists and establish a target lake elevation.[242] A recent state government report analyzing the risks facing Utah relegated Great Salt Lake to a footnote and underestimated the potential cost of lakebed dust mitigation.[243] While the lake dominated political conversations when water levels fell to their lowest point, some politicians seemed content to put the issue on the backburner once the state got a buffer from a good snow year.[244]

Indeed, in 2024, just two years after Great Salt Lake fell to its all-time low, Utah failed to pass a measure to maximize water inflow to the lake during wet years.[245] This legislative resistance came despite official reporting that underscored the importance of capitalizing on wet years to preserve lake elevation.[246] In the same year, the state legislature also refused to pass a number of water conservation and reporting measures.[247] As discussed above, Utah has seen unprecedented legislative collaboration on conservation to confront the crisis it's facing, and yet, this has not proven to be enough thanks to some legislative foot-dragging.

To complicate matters further, state action toward environmental stewardship balances on a precarious

241. Hannah McKinlay, *Winter by the Numbers: Just How Much Snow Did Utah Get This Year?*, DESERET NEWS (Apr. 9, 2023, 1:27 PM), https://www.deseret.com/utah/2023/4/9/23671361/utah-snow-record-snowfall-winter-water-equivalent [https://perma.cc/4P3W-XU9K].

242. Emma Keddington, *Utah Republicans Block Resolution to Create Target Level for the Great Salt Lake*, SALT LAKE TRIB., https://www.sltrib.com/news/2023/02/02/utah-republicans-block [https://perma.cc/4SZ3-5MG9] (last updated Feb. 2, 2023, 1:16 PM).

243. STATE OF UTAH OFF. OF THE LEGIS. AUDITOR GEN., *supra* note 90, at 9.

244. Terry Tempest Williams, *I Am Haunted by What I Have Seen at Great Salt Lake*, N.Y. TIMES (Mar. 25, 2023), https://www.nytimes.com/2023/03/25/opinion/great-salt-lake-drought-utah-climate-change.html [https://perma.cc/9P53-G383].

245. S.B. 196, 65th Leg., Gen. Sess. (Utah 2024).

246. STEED, *supra* note 50, at 25.

247. *See* H.B. 401, 65th Leg., Gen. Sess. (Utah 2024); H.B. 472, 65th Leg., Gen. Sess. (Utah 2024); H.B. 448, 65th Leg., Gen. Sess. (Utah 2024); H.R.J. Res. 27, 65th Leg., Gen. Sess. (Utah 2024); S.B. 118, 65th Leg., Gen. Sess. (Utah 2024).

equilibrium, one that makes efforts to force state action complicated and fraught. The common inclination of environmental groups trying to address environmental crises—such as the collapsing Great Salt Lake—is to lean on litigation, but, as discussed in the next Part, the threat of federal intervention poses a real risk of backfiring. Evidence of the potential backfire can also be seen in legislative actions. Even though legislative momentum is modest, the alternative—legislative withdrawal and backlash given overly heavy-handed litigation—is probably no action at all.

That the legislature can be fickle in the face of such external pressure is evidenced, for example, by the proposed Utah Constitutional Sovereignty Act from the most recent legislative session. This bill purports to establish Utah's legislative authority to pass joint resolutions that prohibit enforcement of federal laws and regulations perceived to undermine state sovereignty.[248] While Utah is by no means the only state passing bills focused on state sovereignty, the motivating factors behind such legislation in Utah should provoke second thoughts among those believing that litigation or federal law will coerce Utah's legislature to stand down rather than prompt it to push back. Much of what has been said about the reason for the Utah sovereignty bill has focused on the environment. In fact, the bill's sponsor referenced federal ozone regulations as a primary rationale for the legislation.[249]

Even beyond the environmental roots of the bill, the writing on the wall is clear—Utah's politicians resent federal law. Upon signing the bill, Utah's governor stated: "Balancing power between state and federal sovereignty is an essential part of our constitutional system. This legislation gives us another way to push back on federal overreach and maintain that balance."[250] Another lawmaker acknowledged the retaliatory nature of the bill on the floor of the Utah State Senate:

248. S.B. 57, 65th Leg., Gen. Sess. (Utah 2024).

249. Bryan Schott, *Can Utah Ignore Federal Laws and Regulations? Legal Precedent Says No, but Legislators Want to Try.*, SALT LAKE TRIB., https://www.sltrib.com/news/politics/2024/01/18/can-utah-ignore-federal-laws [https://perma.cc/7UKL-DEJC] (last updated Jan. 18, 2024, 4:23 PM).

250. *Gov. Spencer Cox Signs Four Bills in the 2024 General Legislative Session*, OFF. OF THE GOVERNOR (Jan. 31, 2024), https://governor.utah.gov/2024/01/31/gov-spencer-cox-signs-four-bills-in-the-2024-general-legislative-session [https://perma.cc/33BM-CDKW].

> I went to law school, a good law school, and I don't believe that Utah has the power to override the Supremacy Clause. Under the Supremacy Clause, as I understand it, the federal law trumps Utah . . . . But there's nothing that I like better, and there's nothing Utah likes better[,] than sticking it to the federal government. If that's the intent of the bill, I guess I'm all in favor of it.[251]

In particular, because litigation and federal regulation only affect getting more water to the lake if state lawmakers actually cooperate with court or regulatory orders, forcing lawmakers to act might not end well.

Even as the legislature passed a bill that draws a line in the sand in using federal law to control state lawmakers, this governing body has likewise shown a willingness to try to thwart environmental litigation risks within its reach. In the 2024 session, the legislature passed a defensive bill that prohibits a governmental entity from granting or recognizing legal personhood in "a body of water" or "land" among others.[252] This bill is viewed by many as a precaution against ongoing efforts by environmental groups to secure legal recognition for Great Salt Lake by means of the rights of nature movement.[253]

Utah's legislative actions surrounding Great Salt Lake reveal a complex landscape of progress, inaction, and occasional regression, underscoring the nuanced challenges in addressing environmental crises through state involvement. While some collaborative efforts have yielded positive changes to state law discussed above, the inconsistent approach—marked by both proactive measures and counterproductive decisions—highlights the delicate nature of state-led environmental initiatives. This mixed record suggests that while state involvement can be valuable, it is not without pitfalls. Nonetheless, this approach may still offer a more sustainable (and potentially more effective) means of addressing local environmental crises when compared to the threat of litigation or painful federal intervention. As we discuss below, any strategy that relies on adversarial litigation or top-down,

251. Schott, *supra* note 249 (quoting Senator Todd Weiler).

252. H.B. 249, 65th Leg., Gen. Sess. (Utah 2024).

253. Ben Winslow, *Water Conservation Bills Begin to Advance at Utah State Capitol*, FOX 13, https://www.fox13now.com/news/great-salt-lake-collaborative/water-conservation-bills-begin-to-advance-at-utah-state-capitol [https://perma.cc/CGT9-4U5U] (last updated Jan. 23, 2024, 5:35 PM).

coercive federalism bears the risk of prompting a defensive posture from the Utah Legislature, potentially hindering progress and cooperation.

IV. LESSONS FROM THE LAKE FOR OTHER LOCAL ENVIRONMENTAL CRISES

Having considered the inadequacy of federal environmental law in confronting the drying Great Salt Lake, we turn to consider some major lessons to be gleaned from the Great Salt Lake case study. We think these lessons are valuable because they reveal much about the trajectory of environmental law in the future, especially the rule of the major federal environmental statutes of the '60s and '70s. These lessons suggest that even if the challenges are great, there are reasons to be optimistic about policy progress at the state-level and, in turn, the future of environmental law.

A. The Origins of Federal Environmental Primacy

Before we consider the future of environmental law, however, we briefly turn to consider its past to contextualize our discussion. Today, we understand that climate change is wreaking increasingly catastrophic impacts on global environmental systems. More and more, climate change has emerged as the defining environmental problem of our age.[254] Much of what we now call environmental law is the product of an age before climate change. As a result, the better part of the environmental legal tools in advocates' quivers are often ill-suited to address climate change's causes or effects (either globally or regionally). This is especially true of the major federal environmental statutes (such as the National Environmental Policy Act, the Clean Air Act, and the Clean Water Act) passed during the late '60s and early '70s—those statutes that are *generally* what one has in mind when using the term "environmental law."[255]

Simply put, these legacy statutes were designed to address a different era's environmental crises, such as postwar

254. And, no doubt, much scholarly attention has been paid to the interplay between existing environmental law and climate change.

255. *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 89–92 (7th ed. 2013).

industrial pollution. A drying lake in the arid American West—due in part to overuse of the lake's inflows but also climate change—has very little in common with polluted rivers in the Northeast. Whether or not we might tend to call both problems "environmental issues," curing each problem demands its own regulatory intervention and legal framework. Despite this reality, environmental advocates sometimes fail to look much further than the major environmental statutes of yesteryear.

In many ways, this tendency shouldn't come as a surprise. For more than fifty years, environmental law has been a creature of federal law. As we have discussed at length elsewhere,[256] this is largely a product of history and path-dependency—in the middle-to-late 20th century, states were seen as having dropped the ball in addressing contemporary dramatic environmental crises.[257] Congress and the president (at that time, Nixon) competed to capture the unclaimed political capital.[258] The result of this arms race, in the context of that generation's particular environmental crises, is what most of us now know as environmental law.

Due to the success of these federal environmental laws in curing the issues they were designed to solve, there has emerged a general presumption that the solution to most or all environmental issues lies in federal law (and, in particular, *those* federal laws). And, following from this is a presumption that environmental quality is a national, rather than local or regional, good.[259] As a result, since the zenith of the environmental movement in the early 1970s, environmental law has been seen as a matter of federal law first and foremost.[260]

But before 1970, controlling pollution and regulating the environment was primarily the onus of the states. It fell to the

256. *See* Brigham Daniels, Andrew P. Follett & James Salzman, *Reconsidering NEPA*, 96 IND. L.J. 865 (2021); Brigham Daniels, Andrew P. Follett & Joshua Davis, *The Making of the Clean Air Act*, 71 HASTINGS L.J. 901 (2020).

257. *See* ROBIN KUNDIS CRAIG, ENVIRONMENTAL LAW IN CONTEXT: CASES AND MATERIALS 676–77 (2d ed. 2008).

258. This history has been addressed at length by the authors. *See supra* note 226 and accompanying text.

259. Richard B. Stewart, *Environmental Quality as a National Good in a Federal State*, 1997 U. CHI. LEGAL F. 199, 213 (recognizing, however, that the presumption of federal-scale solution can be overcome and that "centralization failure" may mean that decentralization is preferable, as we argue here). For counterarguments to Stewart, see Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341 (1996).

260. *See* Todd S. Aagaard, *Environmental Law as a Legal Field: An Inquiry in Legal Taxonomy*, 95 Cornell L. Rev. 221 *passim* (2010).

states to regulate waterways, water and air pollution, and hazardous materials.[261] And to this day, states generally remain in the captain's chair when it comes to land use. As we discuss below, we think that the federal government's primacy in environmental regulation is waning, and we expect states to return to the spotlight of environmental policy innovation.

B. The Limits of Federal Primacy Going Forward: Congressional Inaction and Administrative Deconstruction

Even though the federal government was once willing to take up the mantle and respond to pressing environmental crises, circumstances have changed. When environmental federal law was conceived more than a half-century ago, state governments lacked either the administrative capacity or the political will requisite to scrub dirty air, clean polluted watercourses, and prevent waste spills or toxic materials exposure. But this is no longer the case. Furthermore, many states have built up the administrative capacity to administer complex regulatory programs on a variety of fronts.

This change is especially significant in comparison to the ailing health of the federal congressional process. Congress has become increasingly sclerotic, making legislative innovation difficult to impossible. With limited exceptions, Congress has failed to legislate on some of the most pressing modern environmental crises, such as climate change, fracking, resource extraction, and ecosystem conservation. As a result, at least at the federal level, the burden of adapting environmental law to modern problems increasingly falls on federal agencies.

Practically speaking, federal policy innovation now occurs primarily through agency rulemaking, which is prone to the rollback of subsequent administrations and growing judicial

261. *See, e.g.*, DANIEL A. FARBER ET AL., CASES AND MATERIALS ON ENVIRONMENTAL LAW 525, 691 (8th ed. 2010); Richard J. Lazarus, *The Greening of America and the Graying of United States Environmental Law: Reflections on Environmental Law's First Three Decades in the United States*, 20 VA. ENV'T L.J. 75, 75 (2001); HOLLY DOREMUS ET AL., ENVIRONMENTAL POLICY LAW: PROBLEMS, CASES, AND READINGS 38 (5th ed. 2008); PERCIVAL ET AL., *supra* note 255, at 63–85. These concessions of states' historic role and policy failures in the twentieth century are generally preludes or introductions to substantive discussion of federal regulatory programs.

barriers.[262] Congress's initial legislative design choices are carried out and adapted to changing policy priorities through major rulemaking campaigns that often push the boundaries of statutory text. Evolving judicial attitudes regarding the administrative state and emerging doctrines—from the major questions doctrine to the end of *Chevron*—call into question the propriety of the technocratic administrative governance that environmental law has relied on for so long.[263]

C. Lessons on State Sovereignty in the Future of Environmental Law

With an increasingly logjammed Congress and an administrative state with an uncertain future, we see a greater role for states in the future of environmental law. In fact, we think that positive developments at the state level tend to show that states are *already* beginning to take the lead in environmental policy innovation.[264] And considering the case

262. *See* Nadja Popovich et al., *The Trump Administration Rolled Back More Than 100 Environmental Rules. Here's the Full List.*, N.Y. TIMES, https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html [https://perma.cc/3YTA-H2MS] (last updated Jan. 20, 2021).

263. *See* Loper Bright Enters. v. Raimondo, 603 U.S. 369 (2024).

264. We acknowledge that the potential significance of states as environmental innovators has not been totally ignored, and some remarkable scholarship on the subject has emerged, generating a fruitful and productive discourse on states' role in the drama. *See* Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (criticizing the race-to-the-bottom argument as unsupported); Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "to the Bottom"?*, 48 HASTINGS L.J. 271 (1997) (arguing that the Revesz-inspired "revisionist" take on the race top to the top is not sufficiently explanatory of interstate competition dynamics); Scott R. Saleska & Kirsten H. Engel, *"Facts Are Stubborn Things": An Empirical Reality Check in the Theoretical Debate Over the Race-to-the-Bottom in State Environmental Standard-Setting*, 8 CORNELL J.L. & PUB. POL'Y 55, 55–86 (1998); Jonathan H. Adler, *Interstate Competition and the Race to the Top*, 35 HARV. J.L. & PUB. POL'Y 89, 92–97 (2012) [hereinafter Adler, *Interstate Competition*] (finding no support for a race-to-the-bottom theory); Richard O. Zerbe, *Optimal Environmental Jurisdictions*, 4 ECOLOGY L.Q. 193, 245 (1974); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 587 (1996) ("Whenever the scope of an environmental harm does not match the regulator's jurisdiction, the cost-benefit calculus will be skewed and either too little or too much environmental protection will be provided."); 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, 25 (1996) (suggesting a "matching principle") ("[T]he size of the geographic area affected by a specific pollution source

study of Great Salt Lake highlights two major lessons that we think bear on the future of environmental law: (1) in many situations, states are well suited to address climate-driven environmental problems for legal, political, and practical reasons; and (2) when the stakes are high enough, even red states that tend to espouse different policy priorities can and do innovate on environmental issues (though not always aggressively enough), eschewing traditional assumptions on the political valence of environmental law. Through these lessons, we hope to draw out trendlines and offer projections for the future of environmental law, hopefully participating in serious dialogue about the future of our discipline.

We see a greater role for states than their historic involvement in environmental law. State action can be an important ingredient in creating a nimble, adaptable regulatory approach. This shift represents a fundamental reimagining of environmental law and one that brings to bear a suite of regulatory tools previously left dormant.

1. Scalar and Structural Considerations of Increased State Protection of the Environment

First, states are often well-suited and motivated to address environmental problems specific to their geographies. For example, state and local governments are often the appropriate scale to mitigate geography-specific manifestations of climate change or regulate regional crises. Of course, regulating at a smaller scale inevitably presents its own suite of challenges, too. And the historic shortcomings of some state and local governments in environmental stewardship might raise questions of whether state and local governments that have fallen short in the past—and are even struggling in the present—are up to the task.

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should determine the appropriate governmental level for responding to the pollution. There is no need for the regulating jurisdiction to be larger than the regulated activity."); Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENV'T L.J. 130, 157 (2005). Nonetheless, as a general matter, in the conversation of law and the environment, states rarely occupy the spotlight and are even more rarely lauded for their actual or potential virtues in environmental regulation.

But despite some clear limitations to state regulation generally, such as managing transboundary pollution,[265] state and local governments can be well-positioned to effectively address many environmental problems.[266] Smaller jurisdictions may prove to be more adaptable and, for the most part, are more stable and less prone to the sort of debilitating gridlock that has currently shifted federal environmental law to the province of the administrative state.[267] State governments' strong police powers and general jurisdiction also provide them with more tools to effectively regulate environmental crises.[268] Rather than merely serving as "laboratories of democracy"[269] for future federal policies, states can potentially be effective end-points for environmental regulation in certain contexts. With broader regulatory toolsets, states are poised to serve as the cradle for novel, creative policy innovations, too.

Importantly, theory aside, from a purely descriptive standpoint, states and local governments are already spearheading numerous environmental initiatives,[270] that may not be duly credited or receive the sort of attention that federal programs do. This shift is occurring regardless of theoretical debates regarding the fatalistic breakdown of cooperative federalism or the federal government's ability to wave carrots and wield sticks. Many states are demonstrably assuming the mantle of environmental protection, filling gaps left by federal inaction or limitations.

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265. *See, e.g.*, Thomas W. Merrill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931, 932 (1997).

266. *See* Sarah Fox, *Localizing Environmental Federalism*, 54 U.C. DAVIS L. REV. 133 (2020); Sarah B. Schindler, *Banning Lawns*, 82 GEO. WASH. L. REV. 394 (2014); Keith H. Hirokawa, *Sustaining Ecosystem Services Through Local Environmental Law*, 28 PACE ENV'T L. REV. 760 (2011); Garrick B. Pursley & Hannah J. Wiseman, *Local Energy*, 60 EMORY L.J. 877 (2011); Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231 (2008); Jamison E. Colburn, *Localism's Ecology: Protecting and Restoring Habitat in the Suburban Nation*, 33 ECOLOGY L.Q. 945 (2006).

267. *See* A. Dan Tarlock, *Is There a There There in Environmental Law*?, 19 J. LAND USE & ENV'T L. 213, 221 (2004).

268. We recognize that much of federal environmental law is situated on constitutionally unstable ground; by "putting all of its eggs in one basket," that is, by such heavy reliance on finding federal authority to act under the Commerce Clause, federal environmental law lacks the resilience (and comprehensiveness) necessary to sustainably manage the human environment in America.

269. New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

270. *See supra* notes 224–225 and accompanying text.

In many cases, these environmental initiatives not only stay put but can fuel upward cascades in policy. Local governments, by acting on pressing environmental concerns, can force state action. States' actions can, in turn, affect federal action not only by litigating or enforcing federal programs but by creating policies that bubble upward in scale. Thus, to the extent there is concern about inconsistent policy across states (affecting commerce or trade, for example), directing attention toward change at state and local levels is an effective tool to generate meaningful twenty-first century environmental governance.

While much has been said about the risk of "races to the bottom,"[271] there needs to be even more complementary discourse on the promises of "races to the top,"[272] especially in a new political environment that sees states competing not for polluting industries, but for mobile workers seeking the cleanest communities with the highest standards of living.[273] Thus, addressing local environmental crises may be as much about

271. For examples of sources expressing concern over the threat of a "race-to-the-bottom" among American states, see Adam Babich, *Our Federalism, Our Hazardous Waste, and Our Good Fortune*, 54 MD. L. Rev. 1516, 1533 n.64 (1995); Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039, 2058–61 (1993). We are not the first, of course, to criticize or question this dynamic in terms of American environmental law. *See supra* note 264 and accompanying text.

272. For examples of some literature in this vein, see Adler, *Interstate Competition*, *supra* note 264; PAUL TESKE, REGULATION IN THE STATES 180–81, 191–92 (2004), which found no support for the race-to-the-bottom theory following empirical studies; and Wallace E. Oates, *A Reconsideration of Environmental Federalism*, *in* RECENT ADVANCES IN ENVIRONMENTAL ECONOMICS 1, 15 (John A. List & Aart de Zeeuw eds., 2002). "States appear to be 'pulled' to higher levels of abatement spending by more stringent measures in neighbouring [sic] states, but relatively lax regulations nearby appear to have no effect on such expenditures." *Id.*; *see also supra* note 226 and accompanying text.

273. This new competitive reality is ever more significant in the post-COVID labor market, where employment markets, especially in law, business, tech, and other sectors, are no longer as closely tied to geographic areas. And so, being able to work anywhere is something never before experienced in American labor markets. People are and, we predict, will continue to be much more mobile than in the past, drawn to high quality-of-life areas and regions with rich outdoor recreation opportunities and cleaner environmental resources. The World Bank's *Business Ready* Report now features environmental sustainability metrics to illustrate that environmental conditions significantly influence both investment decisions and talent recruitment. WORLD BANK GR., BUSINESS READY 106–09 (2024), https://openknowledge.worldbank.org/server/api/core/bitstreams/08942fab-9080-4f37-b7be-ef61c9f9aed9/content [https://perma.cc/ST4Y-85YL]. *See generally* Haining Wang & Fei Guo, *City-level Socioeconomic Divergence, Air Pollution Differentials and Internal Migration in China: Migrants vs Talent Migrants*, CITIES: INT'L J. URB. POL'Y & PLAN., Feb. 2023.

maintaining the status quo of economic and social systems as it is avoiding ecological disaster.

This perspective reframes environmental protection as a key factor in economic competitiveness and social well-being. It suggests that proactive environmental policies at the state and local levels can create a virtuous cycle. Environmental stewardship at state and local levels, while not universally adopted, represents a promising evolution in environmental governance. It offers a template for innovation and responsiveness that, if more widely embraced (particularly in conservative states), could significantly reshape the approach to environmental challenges in the coming decades.

2. Cautious Optimism for Red-State Innovation

Second, even red states can play ball and shouldn't be underestimated or villainized. The case study of Great Salt Lake, in our eyes, suggests that there is much more to learn (and more pathways for innovation yet unconsidered) from states sometimes cast as villains in the narrative of environmental law. This cross-aisle innovation should be expected to ramp up, particularly as the potential of local environmental crises grows in states of all political stripes.

Villainizing red states stems from two related mistakes: the first is to view red states as monoliths. But of course, in the most populous states (and especially in their urban cores), environmental protection is generally good politics.[274] The second mistake is to assume that federal politics and right-left issues divide the map neatly into states and local governments. This assumption elides the fact that politics (and political-issue alignment) are simply different at smaller scales.[275]

Even when states do not generally place a high priority on environmental protection per se (as is no doubt the case with Utah, for example), increasingly urgent local and regional environmental crises may provide both the motivation and the pathways for innovation. The impending danger of local fallout quickly creates far different political incentives (and may be politically framed very differently) than the vague threats of

274. Katrina M. Wyman & Danielle Spiegel-Feld, *The Urban Environmental Renaissance*, 108 CALIF. L. REV. 305 (2020).

275. *See* Brigham Daniels, *Why Stop Grazing the Climate Commons?*, 13 MICH. J. ENV'T & ADMIN. L. 88, 124–27 (2023).

global fallout. Again, state-level politics are different and creative issue framing can dodge unnecessarily partisan divides on environmental issues. Thus, states may be well-positioned to offer targeted solutions and adaptation strategies to adequately address local and regional environmental crises.

This can be glimpsed, for example, in Utah's 2024 legislative session alone, as we discussed above in Part III. The marquee bills passed by the Utah Legislature focused on hot-button, red-state issues like limiting restroom choice to transgender school children, declaring the state's sovereignty, and dismantling state-funded university diversity, equity, and inclusion efforts. Even though the rate of change is not enough to save Great Salt Lake, in this mix, the legislature also considered bills to subsidize water-intensive turf removal, increased funding and rulemaking authority for the state's water engineer to allow for increased tracking of water transfers to Great Salt Lake, and increased authority and funding for the State's Great Salt Lake Commissioner to secure water for the lake through voluntary water transfers.[276]

While none of these reforms alone fit the kind of regulatory robustness that water law scholars have envisioned as the solution to failings of prior appropriations, they highlight potential innovation pathways for other Western states that are caught between the necessity of water relocation and the commitment to water rights holders.

The case study of Great Salt Lake also highlights the pragmatic benefit—if not necessity—of paying more attention to state environmental innovations. Without diminishing the importance or legacy of existing federal environmental law,[277] this Article reveals the limitations of tools in addressing environmental crises. Effective solutions often require innovations in state law, suggesting that ignoring state and local government potential may overlook crucial avenues for addressing environmental threats. Indeed, to the extent that environmental law is up to the environmental challenges of the twenty-first century, state and local environmental law may

276. *See, e.g.*, H.B. 453, 65th Leg., Gen. Sess. (Utah 2024) (incorporating mining operations into the state's comprehensive water prioritization scheme for both Great Salt Lake's saline waters and its freshwater inflows).

277. We don't mean to suggest that there is *never* meaningful justification for seeking federal-scale intervention in environmental issues. *See, e.g.*, Adler, *Interstate Competition*, *supra* note 264, at 95–97 (describing some constraints on state action which seem to justify federal intervention).

need to play an increasingly significant, though not exclusive, role.[278]

3. Reconsidering Litigation Strategies and Their Consequences

One final lesson we draw from our case study relates to something else entirely. Especially as the regulatory mantle shifts to the states, we see major risks to scorched earth, twentieth-century–style impact litigation. While litigation has historically been a powerful tool in environmental advocacy and there remains a place for strategic legal action in addressing certain environmental challenges, the current landscape calls for a more nuanced approach.

We emphasize that we do *not* have *litigation innovation* or new campaigns pushing existing claims to their limits in mind.[279] We recognize that litigation can still play a crucial role in environmental matters, such as enforcing existing environmental protections and holding polluters accountable. However, to put it simply, the complexity of modern environmental issues, particularly environmental crises such as the collapsing Great Salt Lake, often require solutions that extend beyond the courtroom.

Retrofitting inapt environmental statutes to contemporary problems, or digging a bit deeper in the barrel of common-law theories, is unlikely to elicit the sort of changes we need to adequately address urgent local environmental crises. For example, the public trust doctrine,[280] arguably best understood as a means of characterizing the title in which state government

278. At the outset, we recognize those who have sought to highlight the potential inroads offered by state and local action on the environment. *See, e.g.*, Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159 (2006) (recognizing that state and local actors often regulate matters of national concern and arguing that a dynamic overlap of environmental regulatory powers between local, state, and federal powers is positive); William E. Taylor & Dennis Magee, *Should All Wetlands Be Subject to the Same Regulation?*, 7 NAT. RES. & ENV'T 32, 34 (1992).

279. This perspective also explored in A. Dan Tarlock, *The Future of Environmental Rule of Law Litigation: Sixth Annual Lloyd K. Garrison Lecture on Environmental Law*, 17 PACE ENV'T L. REV. 237 (2000).

280. For a more full and lucid description of the public trust doctrine, see Erin Ryan, *The Public Trust Doctrine, Property, and Society*, *in* THE ROUTLEDGE HANDBOOK OF PROPERTY, LAW AND SOCIETY 240 (Nicole Graham et al. eds., 2022).

holds sovereign lands,[281] has been wielded, with little success, by environmental litigants across the country who would fashion it into a cudgel to force a broad range of governmental declarations or action on issues ranging from carbon emissions reductions to watershed management.[282]

This tendency to resort to the public trust doctrine is also exhibited in Utah, where environmental litigants have launched a lawsuit in state courts under that doctrine seeking injunctive relief that would, theoretically, *force* the state to refill Great Salt Lake to "healthy" levels.[283] Another lawsuit in Utah seeks declaratory relief related to climate change and carbon pollution under a similar public trust logic.[284] Utah law regarding the public trust doctrine remains unsettled. Regardless of the outcome, finding lasting solutions to Great Salt Lake's complex challenges will require continued collaboration from multiple stakeholders, including the Utah Legislature.[285]

These suits provide legal opportunities yet exacerbate political risk. Whether or not the public trust litigation is successful, it's actually *actively* burning crucial political capital. The risks associated with such litigation, even in cases of marginal success (securing, for example, some declaratory or

281. Illinois Central R.R. Co. v. Illinois, 146 U.S. 387, 452 (1892); *see also* PPL Mont., LLC v. Montana, 565 U.S. 576, 591 (2012); Oregon *ex rel.* State Land Bd. v. Corvallis Sand & Gravel Co., 429 U.S. 363, 370 (1977); Utah Div. of State Lands v. United States, 482 U.S. 193, 195 (1987); Utah v. United States, 403 U.S. 9, 10 (1971) ("In the present report the Special Master found that at the time in question the Great Salt Lake was navigable. We approve that finding.").

282. *See* Daniel C. Esty, *Should Humanity Have Standing? Securing Environmental Rights in the United States*, 95 S. CAL. L. REV. 1345, 1366–71 (2022).

283. Complaint ¶ 108, Utah Physicians for a Healthy Env't v. Utah Dep't of Nat. Res., No. 230906637 (Utah Dist. Ct. Sept. 6, 2023).

284. Complaint for Declaratory Relief, Natalie R. v. State, No. 220901658 (Utah Dist. Ct. Dec. 2, 2022).

285. That's not to say, however, that *Illinois Central* isn't entirely agnostic regarding the relationship between the trust duties identified by the Court and the condition of the water bodies overlying sovereign lands. The most obvious connection between the sovereign lands and the navigable water above them are the core purposes of the public trust doctrine laid out in *Illinois Central*: "[the public] may enjoy the navigation *of the waters*, carry on commerce *over them*, and have liberty of fishing *therein*." *Illinois Central*, 146 U.S. at 452 (emphasis added). *Illinois Central* thus suggests that a state's title to sovereign lands underlying navigable water may, at least to some extent, "necessarily carr[y] with it control over the waters above them." *Id.* Additionally, in fairness, two states to differing degrees have adopted iterations of the public trust doctrine which might import such duties regarding overlying waters and the regulation of water rights. *See* Nat'l Audubon Soc'y v. Superior Ct. of Alpine Cnty., 658 P.2d 709, 712 (Cal. 1983); Mineral Cnty. v. Lyon Cnty., 473 P.3d 418 (Nev. 2020) (applying trust to water rights prospectively).

injunctive relief sought), may outweigh the potential benefits. This is particularly true where the public trust doctrine litigation would hold a knife to the interests of water users in Great Salt Lake's watershed—a sensitive political topic, to say the least. And state policymakers have already expressed their understanding that the litigation is more of gum in the gears of state action than a lubricant. The Utah Department of Natural Resources encapsulated the political discontent regarding the lawsuit: "Litigation, however, cannot solve every problem, and indeed, directs important resources away from efforts to conserve and enhance the lake."[286]

Litigation campaigns entrench unnecessary divisions between so-called environmental and non-environmental interests, burn political capital, signal an unwillingness to compromise or participate in good-faith policymaking discussions, and squander the support of legislators and policymakers who are cast as villains in complaint narratives. What's more, relying on courts to act as the adult in the room may bring some limited success (particularly as environmental crises become increasingly dire), but it's all but certain to halt any legislative momentum toward flexible, sustainable, and democratically achieved nuclear endgames that would result from measured engagement and cooperative models of environmental advocacy.

Thus, the inadequacy of the major federal environmental laws addressed above in tackling many environmental crises stems not only from the fact that these laws are directed toward a different set of environmental problems and crises *but also* from the fact that these statutes necessarily rely both on adversarial litigation and top-down pressure from federal actors. As is discussed below, neither of these forces are reliable, and both bring significant risk of jamming up the works or breaking down the fragile federalism of the twenty-first century. There is an alternative universe of incentive-based regulation, as opposed to punitive regulation, in need of exploration.

286. *Statement on Great Salt Lake Litigation*, UTAH DEP'T OF NAT. RES. (Dec. 21, 2023), https://naturalresources.utah.gov/dnr-newsfeed/statement-on-great-salt-lake-litigation-dnr-dwri-and-ffsl-file-motions-to-dismiss [https://perma.cc/VKR2-69NF].

And while some of the most significant federal environmental statutes give states a role to play,[287] within a framework of *cooperative federalism*, we understand this federalist model poses growing risks. This stems, for the most part, from the assumption that top-down pressure from the federal government can shepherd state action. In the modern political environment, however, such top-down pressure, or federal threats to "go nuclear" and posture with regulatory action,[288] is more likely to be met with severe counterstrikes rather than compliance. Such state backlash is bound to be rationalized and justified by an evolving notion of state sovereignty and a recalibrated balance of federalism, which is rearing its head both in the courts and on the ground (for example, at the Southern border).

As our case study of Great Salt Lake illustrates, this same reality has helped fuel the fire for Utah to push the issue of state sovereignty and declare that it intends to opt out of future federal dictates. While the Supremacy Clause would certainly seem to complicate Utah's ability to make good on its self-governing intentions, it should not be ignored that the examples of the types of federal laws the state might attempt to ignore in the future include those that are firmly rooted in environmental policy—air quality and public lands management.[289]

We reiterate that litigation may conceivably play *some* role in the new generation of environmental law and advocacy—for example, by engaging a different set of stakeholders, such as established economic interests[290]—but it would play a much

287. *E.g.*, *About Air Quality Implementation Plans*, U.S. EPA, https://www.epa.gov/air-quality-implementation-plans/about-air-quality-implementation-plans [https://perma.cc/59Z9-W6Z2] (last updated Dec. 5, 2024) (detailing State Implementation Plans under the Clean Air Act).

288. Brigham Daniels, *When Agencies Go Nuclear*, 80 GEO. WASH. L. REV. 442, 450–55 (2012).

289. Indeed, Utah's visceral abhorrence to its proposed inclusion in the Clean Air Act's Cross State Air Pollution Rule, otherwise known as the "Good Neighbor Provision," backed by its $2 million pledge to fight the rule, underscores this point. *See* Brian Maffly, *Utah Legislature to Pledge $2M for Ozone Fight with EPA*, SALT LAKE TRIB., https://www.sltrib.com/news/environment/2023/01/24/utah-leg-pledge-2-million-ozone [https://perma.cc/2T3Q-89GT] (last updated Jan. 24, 2023, 4:31 PM).

290. For example, tertiary litigation demanding disclosure of environmental crises related risks to publicly traded corporations. *See generally* Roshaan Wasim, Note, *Corporate (Non)disclosure of Climate Change Information*, 119 COLUM. L.

different role than the sleeve-tugging of paternalistic courts that environmental litigants have become accustomed to since the environmental movement of the late 1960s.[291] Emerging trends in politics, government, and judicial restraint simply make this old paradigm antiquated and démodé.

And so, again, when we say we are at a new frontier of environmental law and that strategic innovation is needed, we mean a new *paradigm* of collaborative policymaking and emphasis on legislation, inherently contingent on compromise. In essence, addressing modern environmental crises in many situations will require a delicate balance of approaches, with a renewed focus on collaborative, state-level solutions that harness local knowledge and engagement, while strategically utilizing federal resources and authority (where appropriate), and reserving litigation as a precise tool rather than a blanket strategy.

CONCLUSION

The landscape of modern environmental challenges, particularly local environmental crises, reveals a nuanced and complex reality: While state or local action offers considerable advantages in addressing localized environmental crises, the most effective approach often requires a careful balance of state and local initiatives and federal support. Indeed, our research into state responses to environmental threats reveals this synergy between various levels of governance is essential in navigating the complex landscape of modern environmental threats.

Just as environmental regulation historically began at the state level, the evolving landscape of environmental, political, and legal realities suggests a renewed importance for state involvement and policymaking in environmental law. States can indeed craft and administer new regulatory programs with greater agility and responsiveness to local conditions. However, this doesn't negate the crucial role of federal oversight and coordination. Federal environmental statutes continue to

REV. 1311 (2019); Virginia Harper Ho, *Climate Disclosure Line-Drawing & Securities Regulation*, 56 U.C. DAVIS. L. REV. 1875 (2023); Nate Chumley, Note, *Are Securities Laws Effective Against Climate Change? A Proposal for Targeted Climate Related Disclosure and GHG Reduction*, 25 FORDHAM J. CORP. & FIN. L. 155 (2019).

291. *E.g.*, Frank P. Grad & Laurie R. Rockett, *Environmental Litigation—Where the Action Is?*, 10 NAT. RES. J. 742 (1970).

provide essential tools, particularly for issues that span state borders or require national coordination. Nevertheless, we see compelling advantages in emphasizing state-level action for many environmental issues, especially when dealing with acute, localized environmental threats. This perspective isn't about choosing state action over federal involvement, but rather about finding the right balance and leveraging the strengths of each level of government.

As we confront the environmental challenges of the twenty-first century, the key to addressing local environmental crises lies in cultivating a nimble, adaptive approach to governance. A collaborative approach that maximizes the strengths of local, state, and federal action, may not just be preferable, but necessary. The urgency and complexity of such issues require utilizing all available tools and levels of governance.

Beyond the academic debate over the relative merits of state versus federal policy innovation, the stark reality of crises like the decline of Great Salt Lake compels us to embrace this multifaceted strategy. It is not merely the best option: In many cases, it may be the only viable path forward. This nuanced, collaborative approach offers our most promising avenue for navigating the intricate and pressing environmental landscape we now face, where the luxury of choosing between levels of governance is often overshadowed by the urgency and necessity of comprehensive action. We all must soberly confront the reality that, for environmental crises like a withering Great Salt Lake, there simply may not be any other option.