
FORCE MAJEURE AND THE LAW OF THE COLORADO RIVER: THE CONFLUENCE OF CLIMATE CHANGE, CONTRACTS, AND THE CONSTITUTION

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Climate change is causing significant, permanent changes to the natural world. In the Colorado River Basin, experts forecast that rising temperatures will cause the spread of a drier, more arid climate across the region. The effects of this desertification are already being felt: less rainfall, the loss of deciduous forests, wildfires that engulf urban areas, and a projected 20 to 30 percent reduction in flows on the Colorado River by mid-century. The net effect is an existential crisis for the forty million people that reside in the Colorado River's watershed.

Mitigating the effects of climate change requires swift action. However, the legal framework that governs the waters of the Colorado River is a web of byzantine agreements that is anything but swift to navigate. This is reflected in a saying common amongst practitioners who specialize in what is known as the Law of the River: the Colorado River is burdened with nineteenth-century water law, twentieth-century infrastructure, and twenty-first century problems. How can a legal governance structure negotiated before climate change was understood adapt to such uncharted waters?

This Note explores whether global temperature rises could constitute a force majeure—or Act of God—event that the signatories to the Colorado River Compact could argue releases them from legal obligations made more than a century ago, when climate change was not as foreseeable as it is now. Force majeure is a legal theory that parties can be

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released from their contractual obligations if an unforeseen and extraordinary event intervenes, making compliance with the terms of the contract impossible. On the Colorado River, future projections of a greatly reduced river mean that the Compact signatories will be at an ever-increasing risk of violating their interstate compact obligations. While the Colorado River Compact has governed for more than one hundred years, it seems impossible that it can govern for one hundred more. A force majeure argument could be the lever necessary for the parties to break free of the rigid compact and pave the way for a more flexible and equitable water management future.

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INTRODUCTION

The Colorado River (hereinafter referred to as the River) is an extraordinary river system that flows for 1,450 miles through the American Southwest, from its headwaters in the Rocky Mountains to its wetlands outlet in the Gulf of California.¹ The River's watershed serves seven states—Colorado, Wyoming,

1. *Colorado River*, AM. RIVERS, <https://www.americanrivers.org/river/colorado-river> [https://perma.cc/T2JT-UWS6].

Utah, New Mexico, Arizona, Nevada and California—as well as twenty-nine federally recognized tribal nations² and Mexico.³ In total, the River Basin spans 246,000 square miles.⁴ The mighty River has carved stunning canyons through the red rock of the desert landscape through which it winds, creating internationally iconic landscapes including the Grand Canyon—through which explorer John Wesley Powell famously led two expeditions⁵—and a total of eleven national parks and national monuments and seven national wildlife refuges.⁶

In addition to the natural wonders that it has created, the River is put to use through some of the world's most impressive water infrastructure.⁷ The River Basin serves forty million people and helps the region's economy generate approximately \$1.4 trillion in revenue.⁸ Colorado River water serves numerous fundamental societal needs, including the mining of critical minerals, the irrigation of 4.5 million acres of agriculture, the generation of 4,200 megawatts of hydropower, municipal and industrial water uses for 40 million people, as well as recreational and environmental flows.⁹

However, the River's service to many large agricultural operations and major metropolitan areas has seriously stressed the Colorado River's flows, so much so that the river conservation organization American Rivers has named it

2. BUREAU OF RECLAMATION, FEDERALLY RECOGNIZED TRIBES IN THE COLORADO RIVER BASIN, APPENDIX 1B (Dec. 2018), <https://www.usbr.gov/lc/region/programs/crbstudy/tws/docs/Appx%201B%20Federally%20Rec%20Tribe%2012-13-2018.pdf> [<https://perma.cc/33TQ-SX7P>].

3. *Colorado River Basin*, COLO. WATER CONSERVATION BD., <https://cwcb.colorado.gov/colorado-river> [<https://perma.cc/C9BF-NL2G>].

4. BUREAU OF RECLAMATION, COLORADO RIVER BASIN SECURE WATER ACT SECTION 9503(c) REPORT TO CONGRESS (Mar. 2021), <https://www.usbr.gov/climate/secure/docs/2021secure/basinreports/ColoradoBasin.pdf> [<https://perma.cc/E8YQ-FYXE>].

5. EDWARD DOLNICK, *DOWN THE GREAT UNKNOWN: JOHN WESLEY POWELL'S 1869 JOURNEY OF DISCOVERY AND TRAGEDY THROUGH THE GRAND CANYON* (2001).

6. *Colorado River*, *supra* note 1.

7. MICHAEL HILTZIK, *COLOSSUS: THE TURBULENT, THRILLING SAGA OF THE BUILDING OF THE HOOVER DAM* (2011).

8. *Adapting to a Changing Colorado River: Making Future Water Deliveries More Reliable*, RAND CORP., <https://www.rand.org/well-being/community-health-and-environmental-policy/projects/colorado-river-basin/interactive-brief.html> [<https://perma.cc/ZEA4-Y5G8>]; *Lower Basin of the Colorado River*, AM. RIVERS <https://www.americanrivers.org/river/lower-basin-colorado-river> [<https://perma.cc/U46R-42ZE>].

9. BUREAU OF RECLAMATION, *supra* note 4.

America's most endangered river.¹⁰ As a result of the River's severe overallocation, its flows rarely reach its delta,¹¹ an area once defined by its "awesome jungles" and a "hundred green lagoons."¹² Now, estuaries that were once rich in nutrients and served as critical habitats for endangered marine species and migratory birds are prone to dry-ups that threaten those species.¹³ The water that does flow downstream has been plagued by high salinity levels toxic enough to kill crops,¹⁴ by some estimates causing upwards of \$750 million in economic losses annually.¹⁵

In addition to the Colorado River's overallocation and environmental concerns, climate change is expected to cause significant, permanent aridification across the Colorado River Basin.¹⁶ Experts predict a 20 to 30 percent reduction in flows on the Colorado River by mid-century.¹⁷ Coupled with the overestimate of water available in the River at the time that the seven states in the Basin negotiated the water allocation terms of the Colorado River Compact (hereinafter referred to as the Compact), as explained below, climate change poses an existential crisis for the legal framework governing the

10. *Colorado River*, *supra* note 1.

11. Communications and Publishing, *United States Geological Survey, A River Ran Through It and Brought Life, At Least for a While*, USGS: SCIENCE FOR A CHANGING WORLD (Oct. 24, 2016), <https://www.usgs.gov/news/featured-story/river-ran-through-it-and-brought-life-least-while> [<https://perma.cc/52D4-6369>].

12. ALDO LEOPOLD, *A SAND COUNTY ALMANAC: AND SKETCHES HERE AND THERE* 141–42 (1949).

13. Jeffrey P. Cohn, *Colorado River Delta*, 54 *BIOSCIENCE* 386, 388–91(2004) ("With virtually no water reaching the delta most years, the old lagoons, sloughs, and side channels dried up and the cottonwoods and willows died."); Jennifer Pitt, *Can We Restore the Colorado River Delta?*, 49 *J. ARID ENV'T* 211, 212–14 (2001) ("The ecosystems of the Colorado River delta today only hint at their former splendor. Development upstream in the basin has taken its toll, perhaps nowhere so dramatically as in the delta.").

14. See Herbert Brownell & Samuel D. Eaton, *The Colorado River Salinity Problem with Mexico*, 69 *AM. J. INT'L L.* 255 (1975).

15. See Sarah Zielinski, *Earth's Soil is Getting Too Salty for Crops to Grow*, *SMITHSONIAN MAG.* (Oct. 28, 2014), <https://www.smithsonianmag.com/science-nature/earths-soil-getting-too-salty-crops-grow-180953163> [<https://perma.cc/A2NR-8PV8>].

16. *When Is Drought Not a Drought? Drought, Aridification, and the "New Normal"*, *COLO. RIVER RSCH. GRP.* (Mar. 2018) <http://www.riversimulator.org/Resources/ClimateDocs/WhenIsDroughtNotDrought2018CRRG.pdf> [<https://perma.cc/9V67-6DBU>].

17. Bradley Udall & Jonathan Overpeck, *The Twenty-First Century Colorado River Hot Drought and Implications for the Future*, 53 *WATER RES. RSCH.*, 2404, 2404 (2017).

waterway. The Compact is a rare document in that it was signed decades before climate science was understood but has persisted well into the age where the effects of a changing climate are acutely felt.

The legal framework governing the complicated network of water users started in 1922 with the signing of the Colorado River Compact by the seven Basin states.¹⁸ The landmark interstate compact was signed by President Herbert Hoover in 1929¹⁹ following years of fraught negotiations. The agreement laid the foundation for a century's worth of subsequent water sharing agreements and infrastructure contracts that have collectively come to be known as the Law of the River.²⁰

Contained within the Compact is a water allocation split between the Upper Basin and Lower Basin signatories. The Compact says that the Upper Basin must ensure that the River is not depleted under seventy-five million acre-feet over ten years, calculated on a ten-year rolling average and measured at Lee Ferry, Arizona.²¹ This obligation is the focal point of much debate among those dependent on the water that the Colorado River carries.²² On paper, the Compact grants 7.5 million acre-feet of water to both the Upper and Lower Basin states.²³ In practice, the Upper Basin states only use about 4.3 million acre-feet.²⁴ The rest flows downstream for use in the Lower Basin states—California, Arizona and Nevada—and to two Mexican

18. Colorado River Compact (1922).

19. *Herbert Hoover and the Colorado River*, BUREAU OF RECLAMATION (Aug. 13, 2022), <https://www.usbr.gov/lc/hooverdam/history/articles/hhoover.html> [<https://perma.cc/FRC4-TKZD>].

20. *Law of the River*, BUREAU OF RECLAMATION (June 30, 2015), <https://www.usbr.gov/lc/region/pao/lawofrvr.html> [<https://perma.cc/QYC3-YH2L>].

21. Colorado River Compact, art. III(d) (1922) (articulating the delivery obligation the Upper Basin states are responsible for).

22. See Ken Mirr, *The Colorado River, an Old Law and Utah's Scarce Water Supply*, DESERET NEWS (May 27, 2018), <https://www.deseret.com/2018/5/27/20645774/op-ed-the-colorado-river-an-old-law-and-utah-s-scarce-water-supply> [<https://perma.cc/A5PF-AMJ4>] (discussing what would happen if delivery obligations were not met and the Lower Basin states make a compact call on the river).

23. Colorado River Compact, art. III(a) (1922).

24. BUREAU OF RECLAMATION, UPPER COLORADO RIVER BASIN CONSUMPTIVE USES AND LOSSES 2016–2020: INTERIOR REGION 7: UPPER COLORADO BASIN 12 (Feb. 2022), <https://www.usbr.gov/uc/DocLibrary/Reports/ConsumptiveUsesLosses/20220214-ProvisionalUpperColoradoRiverBasin2016-2020-CULReport-508-UCRO.pdf> [<https://perma.cc/DMM7-WFRC>].

states—Baja California and Sonora—as well as several tribal nations.²⁵

With the specter of climate change threatening to significantly reduce the amount of water flowing in the River, the legal obligations that bind the parties to the terms of the Compact are crashing against the scientific realities of aridification.²⁶ Put simply, the Compact describes a river that no longer exists. The Compact allocates sixteen million acre-feet between its signatories, while scientists now estimate the River's average actual flows to be as low as eleven million acre-feet.²⁷ Given estimates that an acre-foot of water serves one to two households per year, this shortfall is equivalent to the amount of water needed to supply five to ten million households for a year.²⁸ The science indicates that the signatory states may fail to meet their interstate Compact obligations on water delivery if current use continues.²⁹ Even as the federal government provides economic buyouts of water users for voluntary conservation³⁰ and water managers contemplate

25. *Colorado River Basin*, BUREAU OF RECLAMATION (Oct. 10, 2023), <https://www.usbr.gov/ColoradoRiverBasin> [<https://perma.cc/26YU-8KMU>].

26. Udall & Overpeck, *supra* note 17, at 2404.

27. Jennifer Yachnin, *Scant Progress on Colorado River Cuts as Crisis Deepens*, E&E NEWS (Dec. 19, 2022), <https://www.eenews.net/articles/scant-progress-on-colorado-river-cuts-as-crisis-deepens> [<https://perma.cc/6VFR-8C7K>].

28. *See How Many Homes in Arizona, on Average, Share an Acre-Foot of Water Each Year?* ARIZ. DEPT OF WATER RES. (Apr. 21, 2019), <https://new.azwater.gov/news/articles/2021-19-04> [<https://perma.cc/T59E-QJR7>].

29. *See* Udall & Overpeck, *supra* note 17, at 2404; *see also Lower Basin of the Colorado River*, *supra* note 8; *Colorado River Streamflow*, WESTERN WATER ASSESSMENT, <https://web.archive.org/web/20120429024450/http://www.colorado.edu/treeflow/lees/compact.html> [<https://perma.cc/JJH9-G3L3>].

30. Known as System Conservation Pilot Programs or Pilot System Conservation Programs, these are mechanisms authorized and appropriated by Congress and funded through the Bureau of Reclamation whereby water is kept in the Colorado River system by buying out water users for temporary fallowing or reduction in water use that does not endanger those water rights being deemed abandoned under the “use it or lose it” principle of the prior appropriation doctrine. Over the past decade, there have been several such pilot programs. *See, e.g., System Conservation Pilot Program*, UPPER COLO. RIVER COMM'N, <http://www.ucrcommission.com/system-conservation-pilot-program-for-2023> [<https://perma.cc/8RS3-B8N6>] (explaining the Upper Colorado River Commission's System Conservation Pilot Programs from 2015–2018 and 2023) (funding authorized under Pub.L. 117-169 Inflation Reduction Act Title V, Subtitle B, Part 3 “Drought Response and Preparedness” Section 50233 “Drought Mitigation in the Reclamation States”); *see also Pilot System Conservation Program*, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/programs/PilotSysConsProg/pilotsystem.html> [<https://perma.cc/8UUK-49PW>] (explaining the Lower Colorado River Basin's Pilot System Conservation Program) (funding authorized under Pub.

demand management schemes, the hard truth remains: voluntary curtailment may not be enough to stave off Compact noncompliance in the long term.³¹ Critically, it is important to note that the Compact is binding upon the signatories *in perpetuity*.³² The Compact's limitless term, combined with its rigid apportionments, means that eventual non-compliance is a near certainty.

As a result, states across the Basin are scrambling to figure out what happens when basic hydrological realities prevent Compact compliance.³³ Out of these discussions has come a novel idea: given the extraordinary impacts of climate change on the flows of the River—changes that were unforeseeable at the time the Compact was signed over one hundred years ago—can a force majeure clause be read into the Compact that would relieve the signatories of their rigid obligations and open the door to replacing the Compact with a more flexible, equitable solution?³⁴

Interstate compacts are unique legal instruments because they are part contract and part statute.³⁵ When states sign onto an interstate compact, the language of that compact is codified

L. No. 113-235, Consolidated and Further Continuing Appropriations Act, Division D, Title II (2015)).

31. ANNE CASTLE & JOHN FLECK, *THE RISK OF CURTAILMENT UNDER THE COLORADO RIVER COMPACT* (2022).

32. Colorado River Compact, art. III(a), COLO. REV. STAT. § 37-61-101 (2023).

33. *Id.*

34. An example discussion occurred during the 42nd Annual Colorado Law Conference on Natural Resources in Boulder, Colorado. In a presentation at that conference, Eric Kuhn, retired General Manager of the Colorado River District, wrote in a PowerPoint slide that, "Climate change – NOT Upper Basin depletions is the primary reason Lee Ferry flows are (will be) below 82.5 [million acre-feet]. This is a new argument that has not been vetted by the legal and academic communities. It potentially could impact many Western U.S. interstate water compacts." Later in the same panel discussion, Sarah Porter, Director of the Kyl Center for Water Policy at Arizona State University, replied, "I love the idea of climate change as a kind of act of God that disrupts aspects of the Compact. That's a principle of contract interpretation, right? There could be this act of God that, all bets are off. In the case of climate change, could Central Arizona be using that argument, too? Is Central Arizona's junior priority disrupted because we didn't anticipate climate change? If it works for the Upper Basin, then I think it works for Arizona too." The University of Colorado Boulder, *Getches-Wilkinson Center 42nd Annual Colorado Law Conference on Natural Resources – Day 1, Welcome and Sessions 1, 2 and 3*, YOUTUBE at 2:17:32, 2:33:42 (July 12, 2022), <https://youtu.be/7iKi0T5-bPA?si=krcl8hH0Owalri4k> [<https://perma.cc/6XQN-AQCF>].

35. FREDERICK L. ZIMMERMAN & MITCHELL WENDELL, *THE LAW AND USE OF INTERSTATE COMPACTS* 2 (1961) ("Interstate compacts are not only statutes; they are also contracts.").

in the statutes of each state that has entered the agreement.³⁶ Yet interstate compacts also represent an agreement between parties and are subjected to the principles of contract interpretation when scrutinized in court.³⁷ Ever the chameleons, compacts are also rooted in constitutional law, as they originate in Article I, Section 10, Clause 3 of the U.S. Constitution: “No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State.”³⁸ Lastly, the nation’s founders conceived of compacts as a type of treaty, deriving their authority from the principles of diplomatic relations between nations.³⁹ Because of the complicated intersection of various bodies of law that compacts draw upon, this Note will analyze the application of force majeure to contracts, international treaties between nations, and the body of federal common law that has developed around compacts when they end up before the U.S. Supreme Court.

Force majeure clauses are often found in modern contract law, and provide a mechanism for release similar to the doctrine of impossibility of performance.⁴⁰ Also called “Act of God” clauses, they often include natural disasters such as earthquakes and floods.⁴¹ A growing body of literature is interpreting force majeure clauses to include climate change.⁴² Because the parties to the Colorado River Compact signed the agreement over a hundred years ago, long before climate change science was well understood,⁴³ those parties could now argue that the unforeseeable nature of climate change necessitates an implied force majeure clause.

Moreover, the COVID-19 pandemic saw the emergence of a new argument that force majeure clauses should be implicitly read into contracts where the language is otherwise silent to

36. *Id.* at 1.

37. *Id.* at 2 (“[T]he substantive law of contracts is applicable to [compacts].”).

38. U.S. CONST. art. I, § 10, cl. 3.

39. ZIMMERMAN & WENDELL, *supra* note 35, at 7 (“Compact literature is replete with references to international treaty practice. It seems clear that the founding fathers were thinking of interstate agreements in a treaty context.”).

40. J. Hunter Robinson et al., *Use the Force? Understanding Force Majeure Clauses*, 44 AM. J. TRIAL ADVOC. 1, 3 (2020) (quoting THOMAS D. SELZ ET AL., ENTERTAINMENT LAW: LEGAL CONCEPTS AND BUSINESS PRACTICES § 9:60 (3d ed. 2019) (“History of the force majeure clause”)).

41. *Id.*

42. *See id.*

43. *See* SPENCER R. WEART, *THE DISCOVERY OF GLOBAL WARMING: REVISED AND EXPANDED EDITION* (2d ed. 2008).

account for extraordinary circumstances that make contract performance impossible because of an unforeseeable event, like a global pandemic.⁴⁴ This evolving legal theory has particular relevance to rigid obligations like interstate compacts that are difficult to harmonize with the unprecedented rise in global temperatures and associated effects like aridification and prolonged drought.⁴⁵

This Note explores whether such an implied force majeure clause could be read into the Colorado River Compact and related subsequent agreements before exploring what would happen to the Law of the River if a force majeure argument succeeded and released the states from their compact obligations.

In Part I, this Note begins by outlining the major agreements that constitute the Law of the River, starting with the cornerstone Colorado River Compact of 1922. In the years that followed its ratification, the Compact has been augmented by subsequent agreements and interstate power delivery contracts that all call back to the original Compact. These agreements are collectively known as the Law of the River. Understanding this unique body of law is instrumental to constructing legal remedies that attempt to unwind a century's worth of contracts.

In Part II, this Note lays the legal foundation for how a force majeure argument would work, analogizing to pandemic exigencies during the spread of COVID-19 and a body of insurance law that has grappled with climate change. Part II also explores circumstances in which force majeure has been applied to international treaties. These treaties are similar to interstate compacts in that they involve congressional approval. Also similarly, they involve independent governmental entities whose agreements are subject to more administrative and regulatory controls than contracts between private parties.

Lastly, Part III suggests what could happen if such a force majeure argument prevailed. While there is some worry in the water law community that exiting the Compact would upset the delicate balance of the existing governance structure on the River, the reality is that the century-old document has reached a critical point where its usefulness is waning in light of climate

44. See Cosmos Nike Nwedu, *The Rise of Force Majeure Amid the Coronavirus Pandemic*, 61 NAT. RES. J. 1, 1 (2021).

45. Udall & Overpeck, *supra* note 17, at 2404.

change.⁴⁶ Breaking out of the Compact could shatter any reliance on the status quo and force a new apportionment of the region's water resources that better reflects modern science. Should this happen, alternative models of agreement include a federal interstate compact like the Delaware River Basin Compact, wherein a federal agency could streamline and equalize administration of water resources under a compact with a finite but renewable term of duration. Equitable apportionment using a percentage of annually available water, like that used by the Upper Colorado River Commission, would also be a fruitful alternative.

I. THE LAW OF THE RIVER

Coordinated interstate management of the water resources of the Colorado River began in earnest in 1922, when California, Nevada, Utah, New Mexico, Arizona, Colorado and Wyoming signed the Colorado River Compact.⁴⁷ Congress approved the Compact in 1928 in the passage of the Boulder Canyon Project Act.⁴⁸ The landmark agreement apportioned 7.5 million acre-feet to both the Upper and Lower Basin states,⁴⁹ with the ultimate power to apportion between the Basin states left to their individual negotiation and agreement. The Lower Basin states divvied up their allotments in the Boulder Canyon Project

46. There are other fundamental flaws, too, like the exclusion of all tribal nations whose claim to water from the River predates the Compact and whose exclusion is a gross historical injustice long overdue to be corrected. This discussion is outside of the scope of this narrowly defined Note topic but is of the utmost importance. *See, e.g.*, Kyle Dunphey, 'A 100-Year Tragedy' for Tribes in the Colorado River Basin, DESERET NEWS (Dec. 19, 2022), <https://www.deseret.com/utah/2022/12/19/23471244/colorado-river-water-rights-navajo-nation-homes-without-water> [<https://perma.cc/HZG4-VLYJ>] (discussing a century's worth of repercussions resulting from tribal nations' exclusion from Colorado River Compact).

47. The Compact was signed on November 24, 1922, in Santa Fe, New Mexico by W.S. Norviel for the State of Arizona, W.F. McClure for the State of California, Delph E. Carpenter for the State of Colorado, J.G. Scrugham for the State of Nevada, Stephen B. Davis, Jr., for the State of New Mexico, R.E. Caldwell for the State of Utah, and Frank C. Emerson for the State of Wyoming. *See* Colorado River Compact, COLO. REV. STAT. § 37-61-101 (2023).

48. This approval was included in the Boulder Canyon Project Act, 45 Stat. 1057 (1928) (current version at 43 U.S.C. § 617) (specifically, the approval is located in §617(a)).

49. Colorado River Compact, art. III(a), COLO. REV. STAT. § 37-61-101 (2023). "Upper Basin" states are Colorado, New Mexico, Utah, and Wyoming. "Lower Basin" states are Arizona, Nevada, and California. These terms will be defined more fully in the following Section.

Act of 1928, by way of a Supreme Court decision in *Arizona v. California*.⁵⁰ The Upper Basin states followed suit in the Upper Basin Compact of 1948.⁵¹

On the foundation of these interstate agreements sits a century's worth of subsequent agreements pertaining to hydroelectric power generation, voluntary drought cutbacks, and several rounds of contentious Supreme Court litigation between the signatory states. Taken in sum, these compacts, contracts, and court orders have come to be known as the Law of the River. The following sub-sections outline the major cornerstones of this body of law.

A. *The Colorado River Compact*

The Colorado River Compact was borne out of concerns in the states of the American Southwest dependent on the River that a booming California population would monopolize a water resource that was broadly relied on throughout the region.⁵² Western states follow a water allocation system called prior appropriation that benefits water users who secure water resources first, like California did relative to the rest of the American Southwest, over users elsewhere on the River who came later in time. Under the doctrine of prior appropriation, first in time means first in right—the first person to put water to beneficial use had a right to their full water allocation before any other water user who came after.⁵³

Colorado River Compact negotiations began in earnest when the other states along the River became anxious that California would invoke prior appropriation on a basin-wide basis to support its rapid development.⁵⁴ This fear stemmed in part from the Supreme Court's decision in *Wyoming v. Colorado*, which curtailed Colorado's apportionment of water rights on the Republican River by holding that downstream senior rights in

50. *Arizona v. California*, 292 U.S. 341, 353–55 (1934); NORRIS HUNDLEY, JR., *WATER AND THE WEST: THE COLORADO RIVER COMPACT AND THE POLITICS OF THE AMERICAN WEST* 282-306 (2d ed., 2009).

51. Upper Colorado River Basin Compact, ch. 48, Pub. L. No. 81–37, 63 Stat. 31 (1949).

52. HUNDLEY, JR., *supra* note 50, at 53.

53. 11 MICHAEL ALLAN WOLF, *POWELL ON REAL PROPERTY* § 79.02 (2022).

54. See HUNDLEY, JR., *supra* note 50, at 66–82.

Wyoming were enforceable against rights held in Colorado.⁵⁵ This invocation of interstate, basin-wide application of seniority would have had devastating consequences if applied to the Colorado River Basin.

Such an invocation would have denied other states enough water to meet anticipated future demand and would have granted the most water to the state that contributes least to the flows of the River.⁵⁶ At the time, a Denver representative stated that “[w]e have no other source of water than the Colorado River.”⁵⁷ For Colorado in particular, whose Front Range growth was dependent on trans-mountain diversions bringing Colorado River water across the Continental Divide to its Eastern Plains cities, advocating for a compact that carved out dedicated water rights for future growth was of the utmost importance.⁵⁸ This dynamic is frequently at play in the management of water resources, as “[l]ower states tend to develop first and to develop at a faster rate than upper states. Such development causes the upper states to fear that downstream uses will have exhausted the supply before they are able to use the water originating within their own boundaries.”⁵⁹

Because of these concerns, in 1921 Congress authorized the Basin states to pursue an interstate agreement regarding the River.⁶⁰ The states needed congressional authorization because interstate compacts are unique legal mechanisms given their constitutional basis.⁶¹ Interstate compacts are expressly governed by the text of the Constitution. That text reads: “No state shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State.”⁶² The parties came to an agreement and signed the Colorado River Compact in

55. *Wyoming v. Colorado*, 259 U.S. 419 (1922). While the case was decided in 1922, Colorado’s representative at the Colorado River Compact negotiations was the attorney who argued Colorado’s case in the *Wyoming v. Colorado* litigation. He went into the Colorado River Compact negotiations with a hunch as to how the *Wyoming v. Colorado* case would come down. See DANIEL TYLER, *SILVER FOX OF THE ROCKIES: DELPHUS E. CARPENTER AND WESTERN WATER COMPACTS* 107 (2003).

56. See TYLER, *supra* note 55, at 107.

57. Charles J. Meyers, *The Colorado River*, 19 STANFORD L. REV. 1, 6 (1966) (quoting I Record, Meeting No. 3 at 95).

58. See HUNDLEY, JR., *supra* note 50, at 66–82.

59. See Meyers, *supra* note 57, at 10.

60. See HUNDLEY, JR., *supra* note 50, at 66–82, 110–13.

61. U.S. CONST. art. I, § 10, cl. 3.

62. *Id.*

1922.⁶³ President Herbert Hoover, who championed the Compact and the development of the Hoover Dam on the Colorado River, signed a proclamation making the Colorado River Compact effective in 1929.⁶⁴ Arizona initially objected to the terms of the agreement, but eventually ratified the Compact in 1944.⁶⁵

In its final form, the Colorado River Compact apportions the water of the River “in perpetuity.”⁶⁶ The stated purpose of the Compact is to

provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water; to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods.⁶⁷

The Compact achieved equal apportionment by dividing the River Basin into two halves.⁶⁸ The dividing point is Lee Ferry, Arizona, one mile below the mouth of the Paria River.⁶⁹ By the language of the Compact, the Upper Basin is defined as “those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry,”⁷⁰ and the Lower Basin is defined as “those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry.”⁷¹ In common parlance, the Upper Basin refers to Colorado, New Mexico, Utah, and Wyoming because of the

63. See HUNDLEY, JR., *supra* note 50, at 214.

64. See *Herbert Hoover and the Colorado River*, *supra* note 19.

65. *Whiskey Is for Drinking, Water Is for Fighting*, BUREAU OF RECLAMATION, https://www.usbr.gov/lc/phoenix/AZ100/1950/whiskey_drinking_water_fighting.html [<https://perma.cc/G8SE-GXXT>].

66. Colorado River Compact, art. III(a), COLO. REV. STAT. § 37-61-101 (2023).

67. Colorado River Compact, art. I, COLO. REV. STAT. § 37-61-101 (2023).

68. *Id.*

69. Colorado River Compact, art. II(e), COLO. REV. STAT. § 37-61-101 (2023).

70. Colorado River Compact, art. II(f), COLO. REV. STAT. § 37-61-101 (2023).

71. Colorado River Compact, art. II(g), COLO. REV. STAT. § 37-61-101 (2023).

negligible amount of Arizona land in the Upper Basin,⁷² and the Lower Basin refers to Arizona, Nevada, and California because of the negligible amount of New Mexico and Utah lands in the Lower Basin.⁷³ This Note uses the common parlance, with the understanding that the full definitions as articulated in the Compact's Article II are the implied full reference.

Most significantly, the Colorado River Compact apportions "to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7.5 million acre-feet of water per annum."⁷⁴ Added to this apportionment is an obligation that Colorado, Wyoming, Utah, and New Mexico "will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75 million acre-feet for any period of ten consecutive years reckoned in continuing progressive series."⁷⁵ This rolling average clause, combined with the apportionment of 7.5 million acre-feet to each Basin, is discussed in further detail below.

B. Subsequent Agreements

Former President Herbert Hoover was a driving force behind both the Colorado River Compact and the construction of the Hoover Dam.⁷⁶ While negotiating the Compact, Hoover simultaneously facilitated the Boulder Canyon Project Act of 1928.⁷⁷ The Boulder Canyon Act authorized the Boulder Canyon Dam, which would later come to be known as the Hoover Dam in honor of the statesman who championed it.⁷⁸ The Act also accomplished Hoover's other objectives: the ratification of the Colorado River Compact and the apportionment of firm water

72. See *Upper Basin of the Colorado River*, AM. RIVERS, <https://www.americanrivers.org/river/upper-basin-of-the-colorado-river> [https://perma.cc/6UM2-JTA8].

73. See *Lower Basin of the Colorado River*, AM. RIVERS, <https://www.americanrivers.org/river/lower-basin-of-the-colorado-river> [https://perma.cc/VG4E-EKK3].

74. Colorado River Compact, art. III(a), COLO. REV. STAT. § 37-61-101 (2023).

75. Colorado River Compact, art. III(d), COLO. REV. STAT. § 37-61-101 (2023).

76. See HUNDLEY, JR., *supra* note 50, at 169–214.

77. Boulder Canyon Project Act, 45 Stat. 1057 (1928) (current version at 43 U.S.C. § 617); see also *Herbert Hoover and the Colorado River*, *supra* note 19.

⁷⁸78. Boulder Canyon Project Act, *supra* note 77; see also *Herbert Hoover and the Colorado River*, *supra* note 19.

rights between the Lower Basin states.⁷⁹ The Act granted California, Arizona, and Nevada 4.4, 2.8, and 0.3 million acre-feet, respectively.⁸⁰ Additionally, the Act made the Secretary of the Interior the sole contracting authority for Colorado River water use in the Lower Basin, giving them control over releases from Lake Mead, which would be created upon the completion of what was then called the Boulder Canyon Dam.⁸¹

It took another two decades for the Upper Basin states to divvy up their Compact apportionment. They did so in 1948 by signing the Upper Basin Compact.⁸² Importantly, rather than using fixed quantities of water, the Upper Basin Compact allocated water as a percentage.⁸³ The Upper Basin Compact enshrined 51.75 percent to Colorado, 23 percent to Utah, 14 percent to Wyoming, and 11.25 percent to New Mexico.⁸⁴ Arizona was granted a concrete apportionment of 50,000 acre-feet annually for use in the Upper Basin portion of the state.⁸⁵ The Upper Basin Compact also created the Upper Colorado River Commission, which manages the Upper Basin's percentage-based apportionments.⁸⁶

As noted above, Arizona had objections to the Colorado River Compact from the beginning.⁸⁷ Specifically, Arizona was concerned that the original Compact did not apportion specific amounts within the Lower Basin and feared that it would lose out to its more politically powerful and populous neighbor, California.⁸⁸ The dispute between these two Lower Basin states devolved into a skirmish that involved Arizona sending National Guard units to its border with California and even

79. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

80. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

81. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

82. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

83. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

84. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

85. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

86. Boulder Canyon Project Act, *supra* note 77; see also Herbert Hoover and the Colorado River, *supra* note 19.

87. *Whiskey Is for Drinking, Water Is for Fighting*, *supra* note 65.

88. HUNDLEY, JR., *supra* note 50, at 169–214.

commissioning a Navy of commandeered ferry boats before becoming the subject of several rounds of bitterly contentious litigation.⁸⁹ Because the Supreme Court has original jurisdiction between states, the fight went straight to the U.S. Supreme Court in 1952.⁹⁰ The ensuing litigation resulted in a protracted eleven-year battle that cost approximately \$5 million before it was settled in 1963.⁹¹ The legal battle resulted in the approval of the Central Arizona Project, a 336-mile long canal that provides water to five million users,⁹² while also cementing Arizona's place as the most junior user among the Lower Basin Compact signatories.⁹³

C. State, Regional, and Federal Co-Management

The agreements that constitute the Law of the River have created a byzantine governance structure for the Colorado River's water resources. The Bureau of Reclamation is by necessity involved in water management due to its operation of more than 100 federally financed water infrastructure projects on the River, most notably the Hoover Dam below Lake Mead and the Glen Canyon Dam below Lake Powell.⁹⁴ Add to that the seven Basin states, the Upper Colorado River Commission, the twenty-nine federally recognized tribal nations that are served by Colorado River water, the two Mexican states that the River serves, the Mexican national government, the International Boundary and Water Commission, and the maze of irrigation districts, water districts, municipal users, agricultural users, and environmental advocates who are all vying for a piece of the Colorado River pie, and you have a complex web of actors who all have a voice in River resource management.

89. *Whiskey Is for Drinking, Water Is for Fighting*, *supra* note 65.

90. *About the Supreme Court*, U.S. CTS., <https://www.uscourts.gov/about-federal-courts/educational-resources/about-educational-outreach/activity-resources/about> [<https://perma.cc/2N3R-VYR7>].

91. *Whiskey Is for Drinking, Water Is for Fighting*, *supra* note 65.

92. *About the Central Arizona Project*, CENT. ARIZ. PROJECT, <https://www.cap-az.com/about> [<https://perma.cc/Q69N-USQ9>].

93. *Water Supply*, CENT. ARIZ. PROJECT, <https://www.cap-az.com/water/water-supply> [<https://perma.cc/D68T-5L8G>].

94. *Projects and Facilities Database*, BUREAU OF RECLAMATION, <https://www.usbr.gov/projects> [<https://perma.cc/4Z7J-QZLX>].

II. CLIMATE CHANGE-INDUCED FORCE MAJEURE

This Part provides an overview of force majeure clauses, also referred to as Act of God clauses, a term that conveys the events that trigger such clauses are extraordinary and truly unforeseeable. Force majeure clauses are most commonly seen in contract law, so the discussion will start there before proceeding to recent examples. Those examples include the uptick in force majeure invocation due to the COVID-19 pandemic and parallels in insurance law due to the insurance industry being on the front lines of climate change impacts such as rising sea levels and increasing hurricane intensity. While the Supreme Court has said that a compact is, “after all, a contract,”⁹⁵ and this analysis therefore leans on contract law, it is illustrative to turn to the treatment of force majeure in international customary law. At their core, negotiations between states regarding compacts are much like diplomatic relations between nations regarding treaties.⁹⁶

Building on this discussion, this Part will conclude with an articulation of the case for applying force majeure to the Colorado River Compact, anticipating that aridification and drought may soon cause compact compliance to be impossible.

A. *Defining Implied Force Majeure*

What is force majeure? Black’s Law Dictionary defines it as “an event or effect that can be neither anticipated nor controlled; [especially] an unexpected event that prevents someone from doing or completing something that he or she had agreed or officially planned to do.”⁹⁷ Force majeure can include “both acts of nature (e.g., floods and hurricanes) and acts of people (e.g., riots, strikes, and wars).”⁹⁸

In contract law, force majeure is often expressly articulated in a clause that outlines the conditions under which performance would be excused. Force majeure clauses have been used in a variety of situations. Two recent examples include suppliers

95. GEORGE WILLIAM SHERK, *DIVIDING THE WATERS: THE RESOLUTION OF INTERSTATE WATER CONFLICTS IN THE UNITED STATES* 45 (2000) (quoting *Texas v. New Mexico*, 482 U.S. 124, 128).

96. ZIMMERMAN & WENDELL, *supra* note 35, at 7.

97. *Force Majeure*, BLACK’S LAW DICTIONARY (11th ed. 2019).

98. *Id.*

invoking such clauses in excusing a failure to deliver contracted amounts of helium to academic research labs during a national helium shortage⁹⁹ and international banana suppliers invoking such clauses to excuse non-performance to a receiver in Iran because of sanctions imposed by the United States preventing certain payments from Iranian to foreign banks.¹⁰⁰

Force majeure clauses are intended to prevent absurd results if, for example, a major natural disaster makes it literally impossible to perform the terms of the agreement. Force majeure invocations can either be a temporary pause on contractual obligations, as in the helium gas case,¹⁰¹ or permanent, as in the banana import case.¹⁰²

Although force majeure clauses are often explicitly expressed in contracts, such clauses may also be implied under certain circumstances. Indeed, force majeure started as an implied concept.¹⁰³ While force majeure began as “an implied doctrine to excuse non-performance that resulted from ‘an Act of God, [or] natural disasters such as earthquakes and floods,’ it has since come to ‘encompass many man-made and man-caused events such as strikes, market shifts, terrorist attacks, computer hacking, and governmental acts,’ among many others.”¹⁰⁴ Because of this, force majeure clauses have come to be known as “Act of God” clauses to encompass the wide variety of

99. See *Update on National Shortage of Helium*, MASS. INST. OF TECH. OFF. OF THE VICE PRESIDENT FOR FIN. STRATEGIC SOURCING OFF., <https://vpf.mit.edu/update-on-national-shortage-of-helium> [<https://perma.cc/5FCV-FACS>]; Umaima Ejaz, *New Helium Allocation to Campus*, UNIV. OF CAL. DAVIS OFF. OF SAFETY SERVS., <https://safetyservices.ucdavis.edu/news/new-helium-allocation-campus> [<https://perma.cc/4QQP-HGAH>] (sharing examples of how major gas suppliers have invoked force majeure clauses to address transitory supply issues of a finite natural resource).

100. See *Force Majeure Defence Successful*, HESKETH HENRY, <https://www.heskethenry.co.nz/insights-opinion/force-majeure-defence-successful-laysun-service-co-ltd-v-del-monte-international> [<https://perma.cc/HPA7-WJY3>].

101. See *Update on Helium Supply*, UNIV. OF COLO. PROCUREMENT SERVS. CTR., <https://www.cu.edu/blog/psc-communicator/update-helium-supply> [<https://perma.cc/X7H4-SEU5>] (noting that the invocation of the force majeure clause in their contract with helium supplier Airgas has resulted in a transitory reduction in deliveries expected to last six to nine months or possibly longer).

102. *Force Majeure Defence Successful*, *supra* note 100.

103. J. Hunter Robinson et al., *Use the Force? Understanding Force Majeure Clauses*, 44 AM. J. TRIAL AD. 1, 3 (2020) (quoting 2 Thomas D. Selz et al., ENTERTAINMENT LAW: LEGAL CONCEPTS AND BUSINESS PRACTICES § 9:60 (3d ed. 2019) (“History of the force majeure clause”).

104. *Id.*

unforeseeable events that they can invoke.¹⁰⁵ Courts have found an “implied force majeure condition” in contracts where no express force majeure clause exists.¹⁰⁶ Legal scholars have also used economic theory to develop the idea of “incomplete contracts” where conditions that the parties did not contemplate at the time that the agreement was drafted suddenly become obstacles to performance.¹⁰⁷ This means that force majeure clauses do not need to be explicitly stated in a contract in order for a court to read such a waiver of performance into the agreement.

It is tempting to argue that climate change is not an unforeseen event, given the half-century-long history of warnings made by scientists and amplified by the media and academia. This is true now, in the twenty-first century. However, when the Colorado River Compact was being negotiated in the early twentieth century, climate change was still an unpopular and barely acknowledged research interest with few supporters.¹⁰⁸

B. Parallels in Pandemic Exigencies, Insurance Law, and Treaty Enforcement

Because the argument for reading an implied force majeure clause in an interstate water compact is a novel legal theory, it is helpful to argue by analogy to similar situations where climate change has been accepted as a valid excuse for non-performance. Three such scenarios will be examined in turn here: the COVID-19 pandemic, insurance law, and international treaty law.

Courts could find support for reading an implied force majeure clause into the Colorado River Compact by looking to caselaw that arose during the COVID-19 pandemic, in which implied force majeure clauses gained newfound popularity.¹⁰⁹ Indeed, one academic review of how courts ruled on force

105. *Id.* at 2–3.

106. *See* Nitro Powder Co. v. Agency of Canadian Car & Foundry Co., 135 N.E. 507, 508 (1922).

107. *See* Oliver Hart & John Moore, *Incomplete Contracts and Renegotiation*, 56 *ECONOMETRICA* 755.4 (1988), <https://doi.org/10.2307/1912698> [<https://perma.cc/ZLE4-WXJ2>].

108. *See* SPENCER R. WEART, *THE DISCOVERY OF GLOBAL WARMING* 1–18 (2d. ed. 2008).

109. Amy Sparrow Phelps, *Contract Fixer Upper: Addressing the Inadequacy of the Force Majeure Doctrine in Providing Relief for Nonperformance in the Wake of the COVID-19 Pandemic*, 66 *VILL. L. REV.* 647 (2021).

majeure clauses in pandemic cases found that “early COVID-19 litigation indicates an overwhelming willingness to classify COVID-19 as a force majeure event.”¹¹⁰ Among the reasons that courts cited for recognizing COVID-19 as a force majeure event were the rapid and widespread government shutdowns and restrictions.¹¹¹

Courts could also find support for reading an implied force majeure clause into the Compact by looking to recent insurance law, which has been on the front lines of climate change-related force majeure events. Insurance companies are becoming more frequently exposed to losses due to wildfire and hurricane flood risks that are increasing due to climate change.¹¹² While disaster insurance has always, by definition, contended with the unexpected, climate change represents a scaling up of that risk. Climate change “is causing a tipping point in relation to not only our natural environment, but also in relation to the contractual excuse doctrines. Legal change is needed to match the new on-the-ground realities and scientific understanding of risks posed by weather.”¹¹³ As a result, force majeure clauses are becoming more common in insurance law. In circumstances where there is no explicit mention of an Act of God clause, “the absence of a force majeure clause in a contract will not always be detrimental to a party seeking to be excused.”¹¹⁴ Moreover, “a majority of jurisdictions will still excuse a party that cannot fulfill obligations under a contract as a result of a force majeure event, even when no force majeure clause can be found in the contract.”¹¹⁵ Even in insurance law, which is grappling with the front lines of climate change, an explicit force majeure clause is not necessary to invoke an impossibility of performance defense.¹¹⁶

In the realm of pure contract law, the above examples show a trend in the law towards recognizing force majeure as a valid

110. *Id.* at 666.

111. *Id.* at 668.

112. See Itzchak E. Kornfeld, *Insurance Coverage for Droughts, Due to Climate Change: The Case for “Loss of Business Income” and “Loss of Use”*, 10 ARIZ. J. ENVTL. L. & POL’Y 151, 172 (2019).

113. Myanna Dellinger, *An “Act of God”? Rethinking Contractual Impracticability in an Era of Anthropogenic Climate Change*, 67 HASTINGS L.J. 1551, 1564 (2016).

114. Jennifer Sniffen, *In the Wake of the Storm: Nonperformance of Contract Obligations Resulting from a Natural Disaster*, 31 NOVA L. REV. 551, 560 (2007).

115. *Id.*

116. *Id.*

excuse for performance even when not explicitly stated within the four corners of the contract. This trend reflects an established legal regime grappling with the unique and extraordinary circumstances of the twenty-first century. Just as an infectious disease can crisscross the globe in a matter of days, grinding the global economy to a halt—circumstances virtually impossible for even the most creative contract drafter to foresee prior to 2019—so too has climate change posed a variety of unpredictable threats for insurance law, causing hurricanes to increase in strength and frequency, putting coastal regions in increased peril, and causing insurers to rapidly adjust as a consequence.

International treaty law also lends support to reading an implied force majeure clause into the Colorado River Compact. While interstate compacts are akin to contracts, they are not the same. Examples from contract law are helpful for the sake of analogous principles of interpretation, but it is also necessary to draw examples from a body of law that more fully captures how compacts are negotiated agreements between states that require Congressional ratification.¹¹⁷ Here, international treaties are illustrative, as they are also expressly governed by the U.S. Constitution: “[the President] shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur.”¹¹⁸ The negotiation of agreements between countries has many parallels to the negotiation of agreements between states.¹¹⁹ An examination of how international law among nations handles force majeure situations rounds out this analysis.

The Supreme Court drew the parallel between interstate compact disputes and international treaty disagreements itself in 1902 in one of the first interstate water disputes to reach the Court, pre-dating even the Colorado River Compact.¹²⁰ The case

117. U.S. CONST. art. I, § 10, cl. 3 (“No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State.”).

118. U.S. CONST. art. II, § 2, cl. 2.

119. Indeed, Delph Carpenter of Colorado, one of the chief architects of the Colorado River Compact and a proponent of interstate water compacts generally, studied international treaties when he was first developing the idea of drafting an interstate compact to manage water allocation between the Colorado River Basin states. See Patricia J. Rettig, *Once Innovative, River Compacts No Longer Allay Water Challenges*, GOVERNING (May 8, 2022), <https://www.governing.com/now/once-innovative-river-compacts-no-longer-allay-water-challenges> [<https://perma.cc/YQ69-G8UN>].

120. *Kansas v. Colorado*, 185 U.S. 125 (1902).

was *Kansas v. Colorado*. The two states were at odds over how—or even whether—to share the waters of the Arkansas River.¹²¹ Colorado, true to its mining roots, followed the prior appropriation doctrine of water allocation and believed that, “as the sources of the Arkansas River are in Colorado, [Colorado] may absolutely and wholly deprive Kansas and her citizens of any use of or share in the waters of that river.”¹²² Kansas objected, arguing that it had an equal right to the River’s waters.¹²³ The Court observed that, were Colorado and Kansas nations instead of states, they would surely be at war with one another.¹²⁴ Barring that option, the Court adopted what was essentially the legal posture of an international arbiter: “Sitting, as it were, as an international, as well as a domestic tribunal, we apply Federal law, state law, and international law, as the exigencies of the particular case may demand”¹²⁵ From the beginning, the Court recognized that interstate compact agreements bore a striking resemblance to international treaties.

So how does international law handle a force majeure argument in the absence of an explicit clause? Customary international law “identifies exceptions that apply to all treaties, even when not explicitly mentioned.”¹²⁶ The International Law Commission, a multinational body created by the United Nations General Assembly to develop and codify international law,¹²⁷ drafted articles that summarize the customary international law position regarding force majeure.¹²⁸ They state that

121. *Id.* at 142–43.

122. *Id.* at 143.

123. *Id.* at 142.

124. *Id.* at 144. The Court eloquently wrote that “[c]omity demanded that navigable rivers should be free, and therefore the freedom of the Mississippi, the Rhine, the Scheldt, the Danube, the St. Lawrence, the Amazon, and other rivers has been at different times secured by treaty; but if a State of this Union deprives another State of its rights in a navigable stream, and Congress has not regulated the subject, as no treaty can be made between them, how is the matter to be adjusted?” *Id.*

125. *Id.* at 146–47.

126. Susan Rose-Ackerman & Benjamin Billa, *Treaties and National Security*, 40 N.Y.U. J. INT’L L. & POL. 437, 443 (2008).

127. See U.N. Charter art. 13, ¶ 1; see also G.A. Res. 174 (II) (Nov. 21, 1947).

128. Int’l L. Comm’n, Rep. on the Work of Its Fifty-Third Session, U.N. Doc. A/56/10, at 27 (2001), https://legal.un.org/ilc/documentation/english/reports/a_56_10.pdf [<https://perma.cc/7963-JCX9>].

[t]he wrongfulness of an act of a State not in conformity with an international obligation of that State is precluded if the act is due to *force majeure*, that is the occurrence of an irresistible force or of an unforeseen event, beyond the control of the State, making it materially impossible in the circumstances to perform the obligation.¹²⁹

So, international law allows for a state to argue force majeure if the performance of an obligation becomes impossible due to an unforeseen event. The analogy to the Compact is clear: a state could argue that climate change has caused a dry-up of the River's water resources in a manner that was wholly unforeseeable at the time that the Compact was signed, and this unforeseen drying constitutes a force majeure event that makes it impossible to meet its Compact obligations.

In the context of international agreements, "although many legal systems do not generally give relief to a party who is burdened with excessive hardship, these same systems generally recognize party autonomy to provide for the adaptation of contracts to changed circumstances."¹³⁰ Climate change impacts would certainly fall under the definition of changed circumstances here given their potentially "inconceivable magnitude."¹³¹ Lastly, force majeure is accepted as a valid legal argument in international tribunals.¹³²

In sum, customary international law recognizes exceptions to all treaties, even when those exceptions are not explicitly stated in the treaty text. Additionally, force majeure is a valid argument that is used in international tribunals and in disputes between nations regularly. Thus, given its presence and use in both the contract and treaty environments, an implied force

129. *Id.*

130. See Joseph M. Perillo, *Force Majeure and Hardship Under the UNIDROIT Principles of International Commercial Contracts*, 5 TUL. J. INT'L & COMP. L. 5, 11 (1997).

131. Dellinger, *supra* note 113, at 464. Dellinger argues for a critical view of disputes between nation-states that are attempting a force majeure argument to shirk responsibility for the financial cost of climate change consequences that they themselves may have caused by continuing fossil fuel use once the effects of carbon emissions were known. *Id.* at 456–57. Here, we are dealing with a compact that was signed largely before climate science was even understood, and force majeure would allow renegotiation of a compact that is more climate-conscious and adaptable.

132. Myanna Dellinger, *Rethinking Force Majeure in Public International Law*, 37 PACE L. REV. 455, 482 (2017).

majeure clause can also be read into an interstate compact agreement between states.

As shown, litigation following COVID-19, recent cases in insurance law, and customary international law all demonstrate modern contexts where force majeure clauses can be implied into existing agreements. These examples provide important guidance and precedent for reading an implied force majeure clause into the Colorado River Compact.

C. Application of Implied Force Majeure to Interstate Compacts

Applying an implied force majeure clause to the Colorado River Compact requires delving into which specific sections of the Compact would be affected by such a change. This section analyzes the sections most in dispute and how force majeure would be applied to them.

Despite the Colorado River Compact existing for more than a century, there have been near-constant disagreements between Upper and Lower Basin scholars and water law practitioners about what Articles III(a) and III(d) of the Compact mean.¹³³ As some legal scholars have pointed out, these article subsections appear to be at odds with one another.¹³⁴ Article III(a) apportions 7.5 million acre-feet to both the Upper Basin and Lower Basin states, to be divided between them as they see fit.¹³⁵ In contrast, Article III(d) requires that flow of the River not fall below 75 million acre-feet over a ten-year rolling average, measured at Lee Ferry, Arizona. Put another way, the Lower Basin states argue that an average of 7.5 million acre-feet in deliveries are owed to the Lower Basin states each year.¹³⁶ In years where the Colorado River experienced flows greater than 15 million acre-feet, the Lower Basin states have benefitted from surplus water greater than the amount apportioned to them.¹³⁷

133. COLO. RIVER GOVERNANCE INITIATIVE, DOES THE UPPER BASIN HAVE A DELIVERY OBLIGATION OR AN OBLIGATION NOT TO DEplete THE FLOW OF THE COLORADO RIVER AT LEE FERRY? (2012).

134. *Id.*

135. See Colorado River Compact, art. III(a), COLO. REV. STAT. § 37-61-101 (2023).

136. COLO. RIVER GOVERNANCE INITIATIVE, *supra* note 133; see also Colorado River Compact, art. III(d), COLO. REV. STAT. § 37-61-101 (2023).

137. *Lower Basin of the Colorado River*, *supra* note 8.

With aridification and drought drying out the Colorado River system for the last two decades, and climate change projected to further the aridification trend, the question becomes: how do the two dictates in Articles III(a) and III(d) coexist when the flow of the River falls below 15 million acre-feet?

The Colorado River is already over-allocated at current use levels, with the Upper Basin averaging 4.4 million acre-feet of annual usage over the past two decades¹³⁸ and projected to be using 5.94 million acre-feet by 2060.¹³⁹ Those projections show that Upper Basin state usage is estimated to increase by 40 percent.¹⁴⁰ While this amount is still below the Compact's apportionment of 7.5 million acre-feet to the Upper Basin states, it would cause an immediate conflict with the current usage of the Lower Basin states, which use an average of 8.7 million acre-feet—1.2 million acre-feet more than the amount apportioned in the Compact.¹⁴¹

Lower Basin states have traditionally interpreted Article III(d) to mean that the Upper Basin must deliver them at least 7.5 million acre-feet per year on average.¹⁴² Not everyone agrees with that interpretation, however. As some scholars note, “a counter interpretation more favorable to the Upper Basin is that they do not have a delivery obligation, but rather an ‘obligation not to deplete’ the flow of the river below an average of 7.5 million acre-feet/year based on the language used in Article III(d) of the Compact.”¹⁴³

This emphasis on the “obligation not to deplete” opens the door for a force majeure argument. The Upper Basin states can argue that their beneficial consumptive use is not the cause of any eventual ten-year running average falling below 75 million acre-feet. Instead, they can argue that climate change is the cause of the depletion, circumstances wholly beyond their individual control and unforeseeable by their predecessors who signed the Compact.

138. Heather Sackett, Aspen Journalism, *Estimates of Future Upper Colorado River Basin Water Use Confound Planning, Report Shows*, COLO. SUN (Mar. 1, 2021, 6:31 AM), <https://coloradosun.com/2021/03/01/colorado-river-planning-drought-demand-estimates> [<https://perma.cc/FJ89-97K2>].

139. *Id.*

140. *Id.*

141. *Lower Basin of the Colorado River*, *supra* note 8.

142. COLO. RIVER GOVERNANCE INITIATIVE, *supra* note 133, at 2.

143. *Id.*

If Compact non-compliance occurs and the issue comes before the Supreme Court, the Court will likely apply statutory interpretation to divine the original intent of the Compact drafters. The Upper Basin states have a strong argument that Article III(d) relieves the non-compliant party of liability if their usage remained the same but the available amount of water in the River was depleted. Article III(d) reads: “The States of the Upper Division *will not cause* the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years.”¹⁴⁴ The argument here is that no party caused non-compliance—climate change did.

Alternatively, using the economic theory of incomplete contracts,¹⁴⁵ the Upper Basin states could argue by analogy to the instances in which COVID-19 was used to excuse non- or partial performance of the contract. The Upper Basin states could also point to modern insurance law clauses that reflect an updated understanding of climate change more in-line with current science—knowledge that was absent at the time of the Compact’s signing.

Indeed, many of the subsequent agreements that came after the Colorado River Compact explicitly include force majeure clauses that address drought and extreme environmental events. For example, an agreement to transfer water between two of the largest agricultural users in the Lower Basin—the Imperial Irrigation District and the Coachella Valley Water District—articulates a force majeure clause that would excuse performance in the event of extraordinary circumstances that would prevent the transfer of the contracted water amounts.¹⁴⁶

144. Colorado River Compact Art. III(d), COLO. REV. STAT. § 37-61-101 (2023) (emphasis added).

145. Hart and Moore, *supra* note 107.

146. AGREEMENT FOR ACQUISITION OF CONSERVED WATER BY AND BETWEEN IMPERIAL IRRIGATION DISTRICT, A CALIFORNIA IRRIGATION DISTRICT (“IID”), AND COACHELLA VALLEY WATER DISTRICT, A CALIFORNIA COUNTY WATER DISTRICT (“CVWD”) 12 (Oct. 10, 2003), <https://www.usbr.gov/lc/region/g4000/QSA/acquisitionagmt.pdf> [<https://perma.cc/HGT5-EF5B>] (“The risk of a Force Majeure event, such as a natural disaster, act of war or like emergency disrupting IID’s Water Conservation Efforts or disrupting CVWD’s ability to acquire, divert or receive Conserved Water, shall be borne by the Parties in accordance with the following terms; *provided, however, that in no circumstance shall a Priority 3 Shortfall, as described in Article 11 above, an extended drought (even of unexpected magnitude), or a new and unexpected environmental mitigation obligation be deemed a Force Majeure event within the meaning of this Article 12.* Unexpected environmental mitigation obligations that result in increased costs shall be dealt with pursuant to the ECSA and the QSA-JPA. However, should an environmental

Because some sub-agreements contain force majeure clauses that only became common practice after the Compact was negotiated and signed, the original Compact could be read to implicitly contain similar terms dealing with extraordinary events such as climate change that would make Compact performance impossible.¹⁴⁷

Since interstate compacts differ from contract law in their constitutional basis and need for congressional consent and approval of the President, additional argument by analogy to international treaty law would be helpful for the states to argue that impossibility of performance is excused through an implied force majeure clause. Because such clauses can be invoked in treaties between nations that require similar federal governmental consent,¹⁴⁸ then they can also be applied in an interstate compact scenario.

D. Political and Legal Hurdles

Here it is important to note the political and legal hurdles that are preventing much-needed revisions to the Law of the River that are necessary for the governance scheme of the River's resources to directly confront climate change. A force majeure argument would allow states to clear these hurdles in a court of law.

The Colorado River Compact was one of the first water compacts, a pioneering document that paved the way for many other interstate agreements that followed. However, it contained two fundamental flaws that subsequent compacts have learned from and avoided.

First, the Compact apportioned specific amounts of water annually on a river that is subject to extreme variability. Research shows that the true mean flows of the River actually range from 13.5 million acre-feet to 14.8 million acre-feet for the period, examining paleohydrology records for the past five

problem arise which results in a Transfer Stoppage as defined in the QSA, then notwithstanding the above language, the Transfer Stoppage shall be treated as a Force Majeure event.”) (emphasis added).

147. See Deborah F. Buckman, Annotation, *Construction and Application of Restatement Second, Contracts § 261: Discharge by Supervening Impracticability*, 104 A.L.R.6th 303 (2015), for a general discussion of impossibility of performance due to impracticability or impossibility.

148. Rose-Ackerman & Billa, *supra* note 126, at 443, 449.

hundred years.¹⁴⁹ Those records show periods of drought “far more severe and longer lasting than what we’ve experienced” since River gauge record keeping began in 1905.¹⁵⁰ Using an example drought that lasted from 1620 to 1674 where the equivalent flow at Lee’s Ferry, Arizona would have been approximately 13.5 million acre-feet for that fifty-four-year period, researchers showed what would happen if those conditions were to recur today:

The Central Arizona Project (CAP) would experience forty-seven straight years of shortages, including a number of years where the project would divert no water at all. Lake Mead would drop below and stay below the minimum level for the Las Vegas Valley Water District to pump water to its customers . . . for a period of close to twenty years. California, which has the most senior of the prior perfected rights in the lower basin, would experience occasional large shortages. In the upper basin, Lake Powell would operate below the minimum storage level necessary to produce hydroelectric power over 60 percent of the fifty-year period, and there were two periods, one of five years and one of twelve years, where Lake Powell would be empty and the upper-division states would have been unable to meet their obligations to the lower basin under the 1922 Colorado River Compact.¹⁵¹

By allocating specific amounts of water instead of percentages or some other method of calculation, the Compact drafters unwittingly set the stage for the type of dramatic and devastating Compact non-compliance outlined above.

149. Eric Kuhn, *Managing the Uncertainties of the Colorado River System*, in *HOW THE WEST WAS WARMED: RESPONDING TO CLIMATE CHANGE IN THE ROCKIES* 100, 102 (2009). Additional research shows that “the compact negotiators greatly overestimated the average annual flow of the river. Data available to them indicated an average annual flow of 16.4 m.a.f at Lee’s Ferry between 1899 and 1920. Recent data, produced by new scientific techniques, reveal an average annual flow of only 13.5 m.a.f over three centuries. Furthermore, dry cycles have occurred during which flows fell significantly below the long-term average. For example, the average annual flow for the period between 1953 and 1964 was only 11.6 m.a.f.” Douglas L. Grant, *Interstate Water Allocation Compacts: When the Virtue of Permanence Becomes the Vice of Inflexibility*, 74 U. COLO. L. REV. 105, 117–18 (2003).

150. Kuhn, *supra* note 149, at 102.

151. *Id.* at 103.

Second, the Compact's terms are "in perpetuity," binding the Basin states to the flawed fixed terms for an unending future.¹⁵² To be clear, "in perpetuity" is not a legal term of art; it is a valid contract term that means "forever" or "for all time."¹⁵³ After such protracted and painful negotiations, it is understandable how reluctant the negotiators were to begin the process anew for their successors.¹⁵⁴ And yet, the unending term for the Compact is what makes the concrete apportionment flow fatal. An unending contract term assumes a level of stasis and constancy in the physical environment that is no longer present; the new reality is that "dynamism and unpredictability will become more commonplace as climate change accelerates" and, therefore, "the very notion of climate change must alter our worldview, and thus, our view of governance."¹⁵⁵

These two fatal flaws, coupled with climate change, will make the performance of its terms almost certainly impossible in the coming decades. What now? Even the wisest observers of the Colorado River note that the Law of the River "cannot be easily changed, undone, or ignored."¹⁵⁶ While that may be true, if the states of the American Southwest are to find a way to survive the twenty-first century, then change must come, however difficult.

The Compact does explicitly state how it can be revoked. In Article X, the Compact states: "This compact may be terminated at any time by the unanimous agreement of the signatory States."¹⁵⁷ That's easy enough to understand. Only if all states agree can they exit the agreement and establish a new one.

152. Colorado River Compact Art. III(a) ("There is hereby apportioned from the Colorado River System *in perpetuity* to the Upper Basin and to the Lower Basin") (emphasis added).

153. *In Perpetuity*, BLACK'S LAW DICTIONARY (11th ed. 2019).

154. See James S. Lochhead, *An Upper Basin Perspective on California's Claims to Water from the Colorado River Part I: The Law of the River*, 4 U. DENV. WATER L. REV. 290, 296 (2001) ("The final Compact achieved the Upper Basin's desire for a perpetual allocation. Article III(a) of the Compact apportions exclusive beneficial use of water to each Basin "in perpetuity" despite extensive discussions of possible time limits in the negotiations. In the ultimate consent to the Compact, the congressional debates underscore the clear intent of Congress that the Compact effectuated an equitable, perpetual allocation between the Upper and Lower Basins.").

155. Victor B. Flatt, *Unsettled: How Climate Change Challenges a Foundation of our Legal System, and Adapting the Legal State*, 2016 BYU L. REV. 1397, 1417 (2016).

156. Kuhn, *supra* note 149, at 101.

157. Colorado River Compact, art. X.

Unanimous agreement by the states would require “approval or ratification by each participant state legislature.”¹⁵⁸ Because the Compact received congressional approval and is codified in the U.S. Code, its revocation would also require approval or ratification by Congress, where “[c]hanges to federal laws require either a crisis trigger or supermajorities in both houses of Congress.”¹⁵⁹ In any political climate, such an action would require the expenditure of extraordinary political will and effort. The chances of all Basin states and Congress working concurrently to undo the Compact are slim to nonexistent.

This is where the force majeure argument comes in. It can be used as a lever in an environment where the political renegotiation of the Compact between states is unlikely to happen.¹⁶⁰ In lieu of political action, force majeure presents a legal tool that forwards an argument in equity that something must be done to rescue future generations of water users from the shortcomings of our forebears. Such a tool is necessary to prevent the potential disaster that can strike by mid-century, when flows will be 20 to 30 percent less than they are today,¹⁶¹ and aridification causes disproportionate runoff decreases,¹⁶² compounding the problem.

While the U.S. Supreme Court has historically been reluctant to insert its own judgment in interstate matters, given that they are political questions beyond the jurisdictional scope of the legal system,¹⁶³ the urgency of climate change is exactly

158. Kuhn, *supra* note 149, at 101.

159. *Id.*

160. See Barbara G. Brown, *Climate Variability and the Colorado River Compact: Implications for Responding to Climate Change*, in SOCIETAL RESPONSES TO REGIONAL CLIMATIC CHANGE: FORECASTING BY ANALOGY 279, 299 (Michael H. Glantz ed., 1988) (“It appears unlikely that agreement will be reached to undertake such a renegotiation, particularly since the problems of the Colorado River are so much more severe and the issues are so much more complicated today than they were in 1922.”).

161. Udall & Overpeck, *supra* note 17, at 2404.

162. Benjamin Bass et al., *Aridification of Colorado River Basin’s Snowpack Regions Has Driven Water Losses Despite Ameliorating Effects of Vegetation*, 59 WATER RES. RSCH. 1 (2023).

163. See *Colorado v. Kansas*, 320 U.S. 383, 392 (1947) (“The reason for judicial caution in adjudicating the relative rights of States in such cases is that, while we have jurisdiction of such disputes, they involve the interests of quasi-sovereigns, present complicated and delicate questions, and, due to the possibility of future change of conditions, necessitate expert administration rather than judicial imposition of a hard and fast rule. . . . We say of this case, as the court has said of interstate differences of like nature, that such mutual accommodation and

the kind of extraordinary impetus necessary for the Court to overcome its reluctance to wade into interstate political waters.

Moreover, the Colorado River Basin states are not the only actors grappling with outdated compact terms that clash with modern realities. As one scholar noted in a study of the shortcomings of the New York Waterfront Commission Compact of 1953, “the passage of time can cause even the most well-reasoned and carefully written compact to become destabilized in a much different economic or legal environment than existed when it was written.”¹⁶⁴ In the case of the Waterfront Commission Compact, the compact’s two signatories, New York and New Jersey, entered into the interstate agreement to combat corruption in their shipping ports.¹⁶⁵ In 2018, New Jersey filed suit to unilaterally withdraw, noting that the shipping sector had substantially changed in the seventy years that had passed since the parties entered into the compact.¹⁶⁶

While the compact lacked an explicit clause articulating withdrawal provisions, the Supreme Court looked to the legislative history and determined that, “[g]iven that the States did not intend for the agreement to be perpetual, it would not make much sense to conclude that each State implicitly conferred on the other a perpetual veto of withdrawal.”¹⁶⁷ As a result, the Supreme Court unanimously allowed New Jersey to withdraw and, thus, dissolve the compact.¹⁶⁸ Notably, however, both New York and New Jersey stipulated in that case that “[s]tates may not unilaterally withdraw from compacts that are silent as to withdrawal and that set boundaries, apportion water rights, or otherwise convey property interests.”¹⁶⁹ Conversely, the Colorado River Compact has explicit terms within the four corners of the agreement that speak to withdrawal provisions and apportion water rights, making it exactly the type of

agreement should, if possible, be the medium of settlement, instead of invocation of our adjudicatory power.”).

164. Sheldon H. Laskin, *The Nostalgia of Eternity: Interstate Compacts, Time, and Mortality*, 49 RUTGERS L. REC. 25, 26 (2021).

165. See *Waterfront Comm’n of New York Harbor v. Governor of New Jersey*, 961 F.3d 234, 236 (3d Cir. 2020).

166. *Id.* 236–37.

167. *New York v. New Jersey*, 598 U.S. 218, 226 (2023).

168. *Id.* at 228.

169. *Id.* at 226.

interstate compact with which the Supreme Court said it would be reluctant to interfere.¹⁷⁰

Given current conditions on the Colorado River, there is still hope in political solutions like the 2007 Interim Guidelines¹⁷¹ or Drought Contingency Plan,¹⁷² which create temporary paths forward. However, those agreements “can only manage shortages as best they can within the constraints of the existing Law of the River. They cannot manufacture more water.”¹⁷³ As flows reduce due to aridification, a hotter climate, and water loss due to snowmelt runoff reductions, the efficacy of such interim agreements will eventually hit their limit.

Given current projections about how the climate may become more arid and more extreme, parties bound by the rigid terms of the Compact will become more desperate to escape those terms, and the Court may become more willing to listen. Much like climate scientists, Colorado River Compact observers have been raising the alarm for decades. In 1988: “A long-term drought such as [sic] might occur as a result of a change in climate would have drastic impacts on the water uses of the basin. During such a drought, the Upper Basin would have great difficulty meeting its Compact obligations.”¹⁷⁴ In 2008: “The combination of the unpredictable nature of global warming in 1922 and the consequences of the changes it might bring strongly suggest that compact renegotiation is warranted.”¹⁷⁵ In 2022, the centennial of the Compact’s signing: “[T]he fact that necessary cuts in consumption are slow to be realized is evidence

170. *Id.* (“To be clear, the contract-law rule that we apply today governs compacts (like this Compact) that are silent as to unilateral withdrawal and that exclusively call for ongoing performance on an indefinite basis. But that rule does not apply to other kinds of compacts that do not exclusively call for ongoing performance on an indefinite basis—such as compacts setting boundaries, apportioning water rights, or otherwise conveying property interests.”).

171. Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, 72 Fed. Reg. 62272 (Nov. 2, 2007) (creating water shortage guidelines and formally coordinating the Upper and Lower Basin reservoir operations to protect the hydropower and water distribution capabilities of both Lake Powell and Lake Mead).

172. Colorado River Drought Contingency Plan Authorization Act, Pub. L. No. 116-14, 133 Stat. 850 (2019).

173. Robert W. Adler, *Symposium Essay: Revisiting the Colorado River Compact: Time for A Change?*, 28 J. LAND RES. & ENV'T. L. 19, 33 (2008).

174. Brown, *supra* note 160, at 297.

175. Adler, *supra* note 173, at 33–34.

that the compact is sinking deeper into obsolescence. . . . [P]erhaps it's time for the Colorado River Compact to retire.”¹⁷⁶

Having ignored the alarm bells for decades, the consequences of being bound by such a rigid, century-old agreement are finally impossible to ignore.¹⁷⁷ In such an environment, a force majeure argument is the appropriate tool to seek a new and more flexible path forward.

III. PATHS FORWARD

Should any party or parties to the Colorado River Compact successfully argue that the force majeure event of climate change excuses non-performance of their Compact obligations, an alternative management structure would be necessary to coordinate the myriad users on the River system.

This Part explores three models that could be used in such an event: equitable apportionment by the Supreme Court, federal apportionment via administrative agency, or a federal interstate compact like the one used in the similarly complex Delaware River Basin.

A. *Equitable Apportionment*

Equitable apportionment is, in the words of the Supreme Court, “the doctrine of federal common law that governs disputes between states concerning their rights to use the water of an interstate stream.”¹⁷⁸ Because litigation regarding interstate waters necessarily involves states, these cases are always

176. Jonathan Thompson, *On Its 100th Birthday, the Colorado River Compact Shows Its Age*, HIGH COUNTRY NEWS (Nov. 11, 2022), <https://www.hcn.org/articles/colorado-river-on-its-100th-birthday-the-colorado-river-compact-shows-its-age> [<https://perma.cc/B4PJ-SXXL>].

177. See, e.g., *The Most Important River in the American West Is Drying Up*, ECONOMIST (Aug. 16, 2022), <https://www.economist.com/graphic-detail/2022/08/16/the-most-important-river-in-the-american-west-is-drying-up> [<https://perma.cc/2BRU-JY42>]; Conrad Swanson, *A Lifeline Dries Up*, DENVER POST, July 24, 2022, at 1A; Drew Kann et al., *The Southwest's Most Important River Is Drying Up*, CNN (Aug. 21, 2021), <https://www.cnn.com/interactive/2021/08/us/colorado-river-water-shortage> [<https://perma.cc/EAL5-DEPU>]; Abrahm Lustgarten, *40 Million People Rely on the Colorado River. It's Drying Up Fast*, PROPUBLICA (Aug. 27, 2021), <https://www.propublica.org/article/40-million-people-rely-on-the-colorado-river-its-drying-up-fast> [<https://perma.cc/3SED-L5G5>].

178. *Colorado v. New Mexico*, 459 U.S. 176, 183 (1982) (citing *Kansas v. Colorado*, 206 U.S. 46, 98 (1907); and then citing *Connecticut v. Massachusetts*, 282 U.S. 660, 670–71 (1931)).

original jurisdiction cases that are heard directly by the Supreme Court.¹⁷⁹

The Court has only rarely equitably apportioned waters between states.¹⁸⁰ While one scholar asserts that it has only been done three times¹⁸¹ (in *Wyoming v. Colorado*,¹⁸² *New Jersey v. New York*,¹⁸³ and *Nebraska v. Wyoming*¹⁸⁴), another notes that equitable apportionment principles have been applied more broadly in other interstate water suits between states.¹⁸⁵ Regardless, all agree that equitable apportionment is not a regular occurrence at the Court.

Interstate water disputes that come before the Court are often deeply complex and time-consuming.¹⁸⁶ Because of this, the Court appoints Special Masters who oversee the proceedings of such cases who “issue subpoenas, rule on motions, obtain witness testimony, collect evidence, and, in some cases, preside over trials.”¹⁸⁷ Indeed, “not since the nineteenth century has the Court presided over an original jurisdiction trial.”¹⁸⁸

When applying equitable apportionment, the Court weighs a variety of factors to determine how water is to be shared between two or more states, including priority of appropriation and climatic conditions.¹⁸⁹

As with the New York Waterfront Commission Compact litigation discussed above, using the Court to seek compact modification or nullification carries the risk of an adverse

179. This procedure is codified in both the Constitution of the United States (“In all Cases . . . in which a State shall be Party, the supreme Court shall have original Jurisdiction”) (U.S. CONST. art. III, § 2, cl. 2.) and the U.S. Code (“The Supreme Court shall have original and exclusive jurisdiction of all controversies between two or more States”) (28 U.S.C. §1251(a)).

180. Most recently, the Court held that equitable apportionment applies to groundwater as well as surface water disputes in *Mississippi v. Tennessee*, 595 U.S. 15 (2021). The Court has also equitably apportioned waters on the Laramie, Delaware, and North Platte Rivers. Douglas L. Grant, *Equitable Apportionment Suits Between States*, in 4 WATERS AND WATER RIGHTS § 45.07(a) (Robert E. Beck, ed. 1996).

181. Grant, *supra* note 149.

182. *Wyoming v. Colorado*, 259 U.S. 419 (1922).

183. *New Jersey v. New York* 283 U.S. 805 (1931).

184. *Nebraska v. Wyoming*, 325 U.S. 589 (1945).

185. SHERK, *supra* note 95, at 4–18.

186. Anne-Marie Carstens, *Lurking in the Shadows of Judicial Process: Special Masters in the Supreme Court's Original Jurisdiction Cases*, 86 MINN. L. REV. 625, 647 (2002).

187. *Id.* at 627.

188. *Id.* at 682.

189. Grant, *supra* note 149, at 171 (quoting *Nebraska*, 325 U.S. at 618).

outcome. As one scholar put it, “[d]espite the doctrinal feasibility of reallocating water based on harm-benefit comparison, a state contemplating withdrawal from a compact cannot expect an easy time in the Supreme Court.”¹⁹⁰ Indeed, the Supreme Court “will not issue an apportionment decree unless the state seeking it clearly and convincingly proves a threat to its rights of a serious magnitude.”¹⁹¹

Because equitable apportionment is the remedy that the Court applies to interstate water disputes, this is the remedy that any state seeking Compact modification through litigation will face. It would undoubtedly be a long, costly, and difficult path.

B. Federal Apportionment

Another alternative management structure would be federal apportionment via an administrative agency. Since 2022, the Department of the Interior, acting through the Bureau of Reclamation, has indicated that it is willing to take a more active role in the management of Colorado River water resources.¹⁹² As discussed above, the Department of the Interior already has a role in the Lower Basin, as enshrined in the Boulder Canyon Act of 1928.¹⁹³ However, if the Compact were to be dissolved via force majeure, some additional regulatory scheme would need to be put into place to administer the division of water resources between competing user groups. Some possibilities include congressional apportionment¹⁹⁴ or agency apportionment.¹⁹⁵

190. *Id.* at 173.

191. *Id.* (citing *Colorado v. New Mexico*, 459 U.S. 176, 187 n.13 (1982); then citing *Nebraska v. Wyoming*, 325 U.S. 589, 608 (1945); and then citing *Connecticut v. Massachusetts*, 282 U.S. 660, 669 (1931)).

192. *Full Committee Hearing to Examine Short and Long Term Solutions to Extreme Drought in the Western U.S. Before the S. Comm. on Energy and Natural Resources*, 117th Cong. (2022) (Statement of Camille Calimlim Touton, Commissioner, Bureau of Reclamation, U.S. Department of the Interior).

193. *Law of the River*, *supra* note 20.

194. The United States Congress has been reluctant to allocate interstate waters, sharing the U.S. Supreme Court’s preference to leave federalism alone and let the states negotiate amongst themselves. Whether it was Congress’ intent to apportion the waters of the Lower Basin via the Boulder Canyon Project Act is hotly debated, and Congress has been reluctant to do so without the express request of the states involved ever since. Grant, *supra* note 149, at 173–75.

195. The Bureau of Reclamation has expressed willingness to determine where 2–4 million acre-feet of cuts would come from if the states could not reach agreement themselves. *See* Statement of Camille Calimlim Touton, *supra* note 192.

While both are unlikely, the Department of the Interior has recently moved for agency apportionment.

In April 2023, the Department of the Interior released a draft Supplemental Environmental Impact Statement for Near-Term Colorado River Operations¹⁹⁶ that would have been “the first time that the federal government intervene[d] to allocate Colorado River water.”¹⁹⁷ The Department of the Interior had previously set a deadline by which the Basin states needed to advance a proposal of their own the year before; when that deadline passed with no consensus from the states, the Department was forced to draft a federal apportionment proposal. The federal apportionment proposal “would break from the century-long tradition of states determining how to share the river’s water.”¹⁹⁸ Up until 2023, federal apportionment had been a theoretical stick used to compel the states to negotiate amongst themselves. Its use was unprecedented and demonstrated the gravity of the situation on the Colorado River.

The Department of the Interior and, more directly, the Bureau of Reclamation state that they are acting to “address projected extreme drought conditions and . . . prioritiz[e] implementation of near-term actions to stabilize the decline in reservoir storage and prevent system collapse.”¹⁹⁹ The authority of the Secretary of the Department of the Interior to act is by

Notably, it later backed away from this threat due to the displeasure of the states. See Joshua Partlow, *Fear, Frustration and Fatigue: How a Deal to Save the Colorado River Was Struck*, WASH. POST (May 27, 2023), <https://www.washingtonpost.com/climate-environment/2023/05/27/how-colorado-river-deal-was-reached> [https://perma.cc/3GEG-XUAC].

196. Environmental Impact Statements; Notice of Availability, 88 Fed. Reg. 23031 (Apr. 14, 2023); see also *Supplemental Environmental Impact Statement for Near-Term Colorado River Operations*, BUREAU OF RECLAMATION (June 5, 2023), <https://www.usbr.gov/ColoradoRiverBasin/interimguidelines/seis/index.html> [https://perma.cc/QS4R-Q9KN].

197. Alastair Bland, *US Unveils Options for Cutting California’s Colorado River Water*, CAL MATTERS (Apr. 12, 2023), <https://calmatters.org/environment/water/2023/04/colorado-river-water-cuts-california> [https://perma.cc/FYK6-E6ST].

198. Christopher Flavelle, *As the Colorado River Shrinks, Washington Prepares to Spread the Pain*, N.Y. TIMES (Jan 31, 2023), <https://www.nytimes.com/2023/01/27/climate/colorado-river-biden-cuts.html> [https://perma.cc/9RZW-KS4Y].

199. U.S. DEP’T OF THE INTERIOR, BUREAU OF RECLAMATION, DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR NEAR-TERM COLORADO RIVER OPERATIONS 1–8 (Apr. 2023); see also *Interior Department Announces Actions to Protect Colorado River System, Sets 2023 Operating Conditions for Lake Powell and Lake Mead*, U.S. DEP’T OF THE INTERIOR (Aug. 16, 2022), <https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-colorado-river-system-sets-2023> [https://perma.cc/YU5K-K38D].

virtue of the federal Law of the River outlined above. The Secretary is responsible for the operation of both the Glen Canyon and Hoover Dams and for the managing the waters of the lower Colorado River.²⁰⁰ The Bureau is the agency to which that operating authority has been delegated.²⁰¹

In the draft Supplemental Environmental Impact Statement (“SEIS”), the Department of the Interior proposed three potential paths forward. The first was a “no action” option that would maintain the status quo.²⁰² Existing agreements would be enforced but no additional agency action would occur. Under this option, the Department estimates that one or both of Lake Mead and Lake Powell could reach dead pool²⁰³—the term for when the water level of either reservoir drops below the intake valves for the hydropower facilities. Reaching dead pool would have devastating consequences across the regional electrical grid as well as for water supplies below the reservoir.

The second option would reduce releases of stored water from Lake Powell to the Lower Basin states, with water being allocated according to priority and, therefore, junior users suffering a loss of water during curtailments.²⁰⁴

The third option would also reduce releases of stored water from Lake Powell to the Lower Basin states but would break from the priority system.²⁰⁵ Instead, reductions would be distributed equally amongst all of the Lower Basin states.²⁰⁶

Once the states saw the federal proposals, they finally moved to stave off agency apportionment. In May 2023, all seven states collectively sent a letter to Bureau of Reclamation Commissioner Camille Touton formally requesting that the draft SEIS be suspended so that the states can work toward a state-driven plan.²⁰⁷ The Bureau of Reclamation obliged, and the first attempt at agency apportionment was paused in favor of a state-level resolution.

200. *Id.* at 1–10.

201. *Id.*

202. *Id.* at 2–4.

203. *Id.* at 2–7.

204. *Id.*

205. *Id.* at 2–14.

206. *Id.*

207. U.S. DEP’T OF THE INTERIOR, SEVEN STATES LETTER (2023), <https://doi.gov/sites/doi.gov/files/seven-states-letter-5-22-2023.pdf> [https://perma.cc/PAN4-HRHH].

Of the remedies discussed here, federal apportionment is the least desirable. This is because the states are rightfully quick to defend their sovereignty in matters of water allocation within their own borders. If such federal apportionment were to occur, an ideal model would follow the Upper Basin Compact of 1948, which used apportionment on a percentage basis to avoid the rigidity of the concrete numbers outlined in the original Compact.

C. Federal Interstate Compact Model

A final alternative management structure would be a federal interstate compact model. While the Colorado River Compact is a form of interstate compact granted by consent of Congress, there is another type: federal interstate compacts where either Congress initiates the compact and invites the relevant states to join or which the states initiate and invite the U.S. government to join.²⁰⁸ These federal interstate compacts are much less common than interstate compacts that do not have the U.S. government as party to the agreement.²⁰⁹

The first such federal interstate compact was the Delaware River Basin Compact, which created a regional Delaware River Basin Commission to manage the water on a river-basin scale rather than the state level.²¹⁰ Federal and interagency involvement in management of the Delaware River was created to streamline the “duplicating, overlapping, and uncoordinated administration of some forty-three state agencies, fourteen interstate agencies, and nineteen federal agencies which exercise a multiplicity of powers and duties resulting in a splintering of authority and responsibilities.”²¹¹ The Delaware River Basin Compact is administered by a Delaware River Basin Commission consisting of the Governors of Delaware, New Jersey, New York, and Pennsylvania and a commissioner appointed by the President of the United States.²¹² The federal

208. JOSEPH F. ZIMMERMAN, INTERSTATE WATER COMPACTS: INTERGOVERNMENTAL EFFORTS TO MANAGE AMERICA'S WATER RESOURCES, 175–89 (2012).

209. *Id.*

210. *About the Delaware River Basin Compact*, DEL. RIVER BASIN COMM'N, <https://www.state.nj.us/drbc/about> [<https://perma.cc/K8K8-P6DA>].

211. Delaware River Basin Compact, Pub. L. No. 87-328, 75 Stat. 688, 688 (1961).

212. *Id.* at 691.

representative is typically the Commander of the U.S. Army Corps of Engineers North Atlantic Division.²¹³

The stated purpose of the Delaware River Basin Compact and governing commission could just as easily apply to the Colorado River Basin states. The Delaware River Basin Compact states that “the water resources of the basin are functionally inter-related, and the uses of these resources are interdependent. A single administrative agency is therefore essential for effective and economical direction, supervision and coordination of efforts and programs of federal, state and local governments and of private enterprise.”²¹⁴ Moreover, the text of the Delaware River Basin Compact states:

The water resources of the Delaware River Basin, if properly planned and utilized, are ample to meet all presently projected demands, including existing and added diversions in future years and ever-increasing economies and efficiencies in the use and reuse of water resources can be brought about by comprehensive planning, programming and management.²¹⁵

Thus far, the Colorado River Basin states have intentionally avoided a joint federal management model, preferring to resolve use disputes by agreement rather than federal involvement. As one scholar noted, there is a “western desire to tap the federal largesse without incurring federal control. Westerners have long sought a device that would permit them to obtain federal funding for a host of projects . . . and at the same time preserve the integrity of state government.”²¹⁶ This instinct is shared by the Supreme Court, which has repeatedly held that “with regard to interstate water conflicts . . . states should resolve their conflicts among themselves.”²¹⁷ This sentiment has been repeated across nearly a century of original jurisdiction holdings related to interstate water disputes.²¹⁸

213. *Commissioners*, DEL. RIVER BASIN COMM’N, <https://www.state.nj.us/drbc/about/commissioners/index.html> [<https://perma.cc/247W-MMLG>].

214. Delaware River Basin Compact, *supra* note 211, at 690.

215. *Id.*

216. HUNDLEY, JR., *supra* note 50, at xi.

217. SHERK, *supra* note 95, at 29.

218. *See, e.g.*, *New York v. New Jersey*, 256 U.S. 296, 313 (1921) (noting that water disputes between states are “more likely to be wisely solved by co-operative study and by conference and mutual concession on the part of representatives of

However, the federal government has recently shown more active interest in managing Colorado River water on a basin-wide basis. In June 2022, the Bureau of Reclamation Commissioner Camille Touton testified at a Senate Committee on Energy and Natural Resources hearing that cutting 2–4 million acre-feet of water usage would be necessary in order to prevent the Bureau, through the Department of the Interior, acting to make the cut determinations itself.²¹⁹ In that testimony, Commissioner Touton noted that “it is in our authority to act unilaterally to protect the [Colorado River] system, and we will protect the system.”²²⁰ Such action has precedent, following the line of argumentation that extensive federal agency involvement makes rivers like the Colorado de facto “federal” rivers.²²¹ With the federal government indicating that it is not only willing to get involved in water management decisions, but indeed explicitly stating that it *will* get involved in Colorado River management, instituting a federal interstate compact model would ensure that everybody on both the state and federal level has an equitable seat at the table while streamlining the decision-making process.

Additionally, the Delaware River Basin Compact has an initial duration of one hundred years, rather than the “in perpetuity” duration that the Colorado River Compact used.²²²

the States so vitally interested in it than by proceedings in any court however constituted”); *Arizona v. California*, 373 U.S. 546, 564 (1963) (“[W]e are mindful of this Court’s often expressed preference that, where possible, States settle their controversies by ‘mutual accommodation and agreement.’”); *Kansas v. Nebraska*, 574 U.S. 445, 474 (2015) (“[N]egotiation is usually the best way to solve interstate disputes[.]”) (citing *New York v. New Jersey*, 256 U.S. 296, 313 (1921)).

219. *Full Committee Hearing to Examine Short and Long Term Solutions to Extreme Drought in the Western U.S.: Hearing Before S. Comm. on Energy and Natural Resources*, 117th Cong. (2022) (Statement of Camille Calimlim Touton, Commissioner, Bureau of Reclamation, U.S. Department of the Interior); Yachnin, *supra* note 27.

220. S. Comm. on Energy and Natural Resources, *Full Committee Hearing to Examine Short and Long Term Solutions to Extreme Drought in the Western U.S.*, U.S. SENATE, at 34:50 (June 14, 2022), <https://www.energy.senate.gov/hearings/2022/6/full-committee-hearing-to-examine-short-and-long-term-solutions-to-extreme-drought-in-the-western-u-s> [<https://perma.cc/KQZ9-L3J3>].

221. See SHERK, *supra* note 95, at 24 (using the Missouri River as an example of a river that has de facto federal oversight because of the involvement of the Corps of Engineers, Bureau of Reclamation, Western Area Power Administration, Fish and Wildlife Service, Environmental Protection Agency, Bureau of Land Management, Department of the Interior, Bureau of Indian Affairs, and Department of Justice in water management affairs alongside the states).

222. Delaware River Basin Compact, *supra* note 211, at 691.

Such a long but finite duration could help split the difference between the need for potentially contentious renegotiation while also allowing flexibility should conditions change due to circumstances like climate change.

Such a federal interstate compact model would allow each of the Colorado River Basin states a seat at the table while also allowing a Bureau of Reclamation or Department of the Interior representative to be an equal partner. Apportionment using a percentage allocation rather than hard numbers would allow the entire River system to be flexible and able to more quickly and fairly react to changing environmental conditions.

CONCLUSION

Applying a force majeure argument to excuse the possibility of Colorado River Compact non-compliance is not just an academic exercise. It is an effort to address the very real circumstances of climate change that are fundamentally altering natural resources upon which humans rely to survive. Water is necessary for human civilization—as drinking water, as the source of hydroelectric power that keeps the lights on, as the backbone of a rich agricultural society that feeds many beyond our national borders. The Colorado River Compact was signed at a time when climate change was not fully understood, even if it was already underway. Unable to peer into the future, the signatories could not have comprehended how the rigid terms written into their compact would cause River users a century later to confront the impossibility of performance with those terms. At the time, there were no projections that Colorado's climate would become more like Arizona's throughout the course of the twenty-first century, or that aridification would permanently decrease snowfall and lower the amount of water flowing through the river channel that carved the Grand Canyon.

By exploring how force majeure can be applied in an era of climate change to terminate outdated agreements, it also opens up the possibility of new beginnings: agreements that are more climate-conscious, invite more diverse participants to have a seat at the table, and have a flexibility that allows for more nimble navigation of our evolving and changing environmental circumstances.

Regardless of how it happens, the Colorado River Compact needs to be changed to reflect the reality of climate change, and efforts to do so will certainly prove instructive to other natural resource agreements grappling with the changed climate of our present and future.