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Article 3

Law and Governance of the Great Lakes

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LAW AND GOVERNANCE OF THE GREAT LAKES

*Noah D. Hall and Benjamin C. Houston**

INTRODUCTION

The Great Lakes are vast. The five lakes that make up the system—Superior, Michigan, Huron, Erie, and Ontario—comprise the largest freshwater system on Earth and contain approximately one-fifth of the world's water supply.[1] The Great Lakes provide water for consumption, highways for trade and transportation, fuel for power, and natural beauty for recreation.[2] Approximately 35 million people live within the Great Lakes Basin, and 23 million depend on the Lakes for their drinking water.[3] The Lakes are more than 750 miles wide and have a surface area greater than 300,000 square miles; there are 25,000 square miles of connected smaller lakes, hundreds of miles of navigable rivers, and 10,000 miles of shoreline.[4] Simply put, the Great Lakes are enormous in their physical size and quantity of water.

The enormity of the Great Lakes is matched by a governance and legal regime that can overwhelm attorneys and policymakers. The system is shared and governed by two countries, eight states,[5] two provinces, and numerous Indian tribes and First Nations, in addition to a multitude of American, Canadian, and international agencies, as well as thousands of local governments.[6] This "patchwork" of Great

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1. MARK SPROULE-JONES, RESTORATION OF THE GREAT LAKES: PROMISES, PRACTICES, PERFORMANCES 3 (2002).

2. GOV'T OF CAN. & U.S. ENVTL. PROT. AGENCY, THE GREAT LAKES: AN ENVIRONMENTAL ATLAS AND RESOURCE BOOK, at 3 (3d ed. 1995) [hereinafter CAN. & EPA, GREAT LAKES ATLAS], *available at* http://epa.gov/greatlakes/atlas/glat-ch1.html.

3. LEE BOTTS & PAUL MULDOON, EVOLUTION OF THE GREAT LAKES WATER QUALITY AGREEMENT 2 (2005); *see also* SPROULE-JONES, *supra* note 1, at 2.

4. BOTTS & MULDOON, *supra* note 3, at 1–2.

5. Illinois, Indiana, Michigan, Minnesota, Ohio, Pennsylvania, New York, and Wisconsin.

6. Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405–06 (2006); Jessica A. Bielecki, *Managing Re-*

Lakes governance has achieved mixed success, as the stressors affecting the Lakes have grown more pronounced.[7] While the size of the Great Lakes necessitates some unique governance structures and legal rules, most of the complexity relates to social challenges, not physical size. From a governance perspective, there is no single "Great Lakes system," nor a discreet "Great Lakes population." Instead, there are many overlapping environmental and natural resources within the Great Lakes system and similarly overlapping populations concerned with specific resources and functions.

For example, when managing lake levels to support navigation and shipping, the Great Lakes must be considered in the entirety of their natural and human-altered watershed, and the concerned population includes tens of millions of residents and businesses in both the United States and Canada. Thus, governance of an issue like system-wide lake levels should be (and is) addressed at an appropriately large international scale. However, when managing water withdrawals from an inland trout stream within the Great Lakes watershed, local concerns and interests should play a significant role, and perhaps the relatively local interests warrant smaller scale governance. The debate over the scale of governance in the Great Lakes comes with some ideological baggage, as advocates bring their own preferences for large central government as opposed to local control. International governance of a large transboundary system like the Great Lakes has some logical appeal, but it must be balanced against the interest in subsidiarity, which "expresses a preference for governance at the most local level consistent with achieving government's stated purposes."[8]

The debate over the appropriate legal rules for managing and protecting the Great Lakes is equally complex and loaded with diversity. There is of course no single human view towards the "environment," but rather a wide range of values that vary by individual, time, place, and the environmental decision at issue. For persons that rely on the Great Lakes for drinking water, water quality protection is a priority of the legal regime, and applicable laws should be strengthened. However, for persons that rely on the Great Lakes to disperse industrial pollution, availability of water for effluent discharge is a priority and water quality regulatory laws are an economic burden. To best

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sources with Interstate Compacts: A Perspective from the Great Lakes, 14 BUFF. ENVTL. L.J. 173, 176 (2007).

7. *See* Nicholas T. Stack, Note, *The Great Lakes Compact and an Ohio Constitutional Amendment: Local Protectionisms and Regional Cooperation*, 37 B.C. ENVTL. AFF. L. REV. 493, 494 (2010).

8. George A. Bermann, *Taking Subsidiarity Seriously: Federalism in the European Community and the United States*, 94 COLUM. L. REV. 331, 339 (1994).

understand the laws and governance of the Great Lakes, one must be objective in recognizing the diversity of values, interests, and priorities at play and acknowledge the fallacy of a single "best" solution for everyone.

The diversity of values and interests in the Great Lakes creates a tremendous challenge when using law and governance to address emerging environmental issues. The Great Lakes are beset by pollution from industry, afflicted by eutrophication due to agricultural fertilizers, invaded repeatedly by nonnative species, threatened by climate change, and eyed by more arid regions for diversions to ease water shortages in other areas of the country.[9] Myriad legal regimes have arisen to address these challenges within the Great Lakes governance structure.

This Article aims to explain the law and governance of the Great Lakes within the United States. While discussing the key laws and policies, we do not provide an encyclopedic accounting of all relevant Great Lakes laws and governance institutions. Instead, this Article aims to explain the fundamental structure that establishes and limits federal, state, and tribal governmental powers. The structure is relatively permanent; laws and agencies may come and go. By understanding the structure, with all of its strengths and shortcomings, we can best use the available legal tools to address new and emerging issues that face the Great Lakes.

We begin in Part II with the federal government and explore the sources of authority for federal policy making relevant to the Great Lakes. Part II begins with federal treaty powers enabling the Boundary Waters Treaty and Great Lakes Water Quality Agreements. It then looks at federal regulatory powers over interstate commerce and navigation, and the exercise of such regulatory power through the Clean Water Act. Finally, Part II details the supremacy of federal law and resulting potential for preemption of state law, such as the federal ban on states' Great Lakes oil drilling permits.

Part III examines the extent and limitation of state powers over the Great Lakes. It begins with a historical look at the Northwest Ordinance of 1787, which established the rules for statehood in the Great

9. *See* CAN. & EPA, GREAT LAKES ATLAS, *supra* note 2, at 29–37, *available at* http://www.epa.gov/glnpo/atlas/glat-ch4.html; *see also Preparing for Climate Change in the Great Lakes Region*, *in* CLIMATE CHANGE IN THE GREAT LAKES REGION: NAVIGATING AN UNCERTAIN FUTURE 249–50 (Thomas Dietz & David Bidwell eds., 2012) (noting that there is "ample evidence" that climate change could have profound direct and indirect impacts on the Great Lakes, including changed precipitation patterns, reduced freezing, and greater seasonal weather variability).

Lakes region.[10] The Northwest Ordinance also helped establish the equal footing of the states subsequently admitted to the Union, which gave those states title to the beds under the Great Lakes. Part III then looks at opportunities for the states to collectively and cooperatively govern the shared Great Lakes using interstate compacts with the consent of Congress. When cooperation has broken down, the Supreme Court has provided both the forum and the basic principles for resolving interstate disputes, developing doctrines of interstate nuisance and equitable apportionment that can limit states' uses of shared natural resources. Finally, Part III describes an additional limitation on state sovereignty over natural resources when state laws impermissibly burden interstate commerce; this doctrine is especially relevant to state restrictions on the export of water to other states.

Part IV describes the rights and responsibilities of tribal governments in the management of Great Lakes water and fisheries. Part V then looks at private water use rights and the protection of these property rights as an important part of the governance picture. The U.S. Constitution prohibits the taking of property without just compensation, and federal and state government regulation can amount to a taking if it goes too far. However, the federal government has a navigational servitude that insulates it from takings claims when advancing navigation on the Great Lakes. Similarly, the states have the public trust doctrine, which limits a state's ability to divest itself of trust resources (such as Great Lakes bottomlands) but also empowers a state to protect trust resources without being subject to takings claims.

We offer several disclaimers in our explanation of Great Lakes law and governance. First, our discussion excludes Canadian domestic law. This is by no means a knock on the importance of Canadian domestic law in governing the Great Lakes. We could summarize the relevant Canadian domestic law easily enough, but the premise of this Article is that understanding governance requires far more than a simple inventorying of relevant laws. To appreciate how Canadian domestic laws govern the Great Lakes would require a thorough understanding of Canada's legal system and unique form of federalism, which differs in many ways from that of the United States. Such an effort is well beyond the scope of this Article.

Second, the ordering of the parts and subparts of this Article is not intended to put the relevant doctrines, laws, and institutions in order

10. Matthew J. Hegreness, Note, *An Organic Law Theory of the Fourteenth Amendment: The Northwest Ordinance as the Source of Rights, Privileges, and Immunities*, 120 YALE L.J. 1820, 1823 (2011).

of importance or legal priority. Instead of beginning with the powers of the federal government, we could have started with the individual property rights and tribal sovereignty that predated the United States. Similarly, we could approach the federalism balance by first looking at state authority and then viewing the federal government as a limitation on state sovereignty. While the order does not matter, all of the parts are essential to having a complete picture of the powers and authorities for Great Lakes law and governance.

II. Federal Powers and Supremacy

Our discussion of the law and governance of the Great Lakes begins with the powers and supremacy of the federal government. The Constitution, as interpreted by the Supreme Court,[11] provides the system of federalism and balance of power between the federal government and the states. The framers of the Constitution recognized the tension between empowering a competent federal government (after the failed Articles of Confederation) and protecting state sovereignty.[12] The Constitution thus establishes a federal government of limited enumerated powers, meaning that the federal government has only those powers granted to it by the Constitution.[13] The enumerated powers most relevant for Great Lakes governance are the power of the federal government to enter into treaties and the power of the federal government to regulate interstate commerce.[14]

To execute these enumerated powers, Congress relies on the Necessary and Proper Clause, which provides that Congress shall have power "[t]o make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof."[15]

The Tenth Amendment, included in the original Bill of Rights, further limits the federal government to its enumerated powers. It pro-

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11. *See* Marbury v. Madison, 5 U.S. (1 Cranch) 137 (1803) (establishing that the judicial branch of the federal government is entrusted with interpreting and enforcing the Constitution, and that the other branches must yield to its decisions).

12. *Compare* The Federalist No. 16, at 102–03, 123 (Alexander Hamilton), No. 37, at 233–34 (James Madison) (Jacob E. Cooke ed., 1961), *with* The Federalist No. 14, at 86 (James Madison), No. 84, at 579–80 (Alexander Hamilton) (Jacob E. Cooke ed., 1961).

13. *See, e.g.*, United States v. Lopez, 514 U.S. 549, 552 (1995); Gregory v. Ashcroft, 501 U.S. 452, 457 (1991); United States v. Harris, 106 U.S. 629, 636 (1882); Loan Ass'n v. Topeka, 87 U.S. (20 Wall.) 655, 663 (1874); New Orleans v. United States, 35 U.S. (10 Pet.) 662, 736 (1836); McCulloch v. Maryland, 17 U.S. (4 Wheat.) 316, 405 (1819); *Marbury*, 5 U.S. (1 Cranch) at 176.

14. *See infra* Part II.A–B.

15. U.S. Const. art. I, § 8, cl. 18.

vides: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."[16] The Supreme Court has relied, in part, on the Tenth Amendment to support the principle of limited federal government, while also recognizing that the Amendment adds little to the Constitutional framework already in place.[17]

A. Federal Treaty Power

The Constitution provides that 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."[18] Over the past two centuries, the President has exercised this power to commit the United States to hundreds of international obligations. More often, the President enters into so-called executive agreements, which commit the United States without going through the Article II process (i.e., Senate approval).[19] As detailed above, the treaties entered into by the President are deemed by the Constitution to be part of the supreme law of the land.[20] Even executive agreements that lack Senate approval are supreme over state law, according to the Supreme Court.[21] Thus, treaties and executive agreements preempt inconsistent state law and are an important source of federal power.[22]

The federal government has exercised its treaty power to execute treaties and agreements that manage and protect the Great Lakes. It has done this through both Article II treaties (subject to Senate approval) and executive agreements. This Part details the Boundary Waters Treaty[23] and the subsequent Great Lakes Water Quality Agreements[24] that have resulted from the federal treaty power.

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16. *Id.*

17. *See, e.g.*, Brent v. Bank of Wash., 35 U.S. (10 Pet.) 596 (1836); Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1 (1824); *McCulloch*, 17 U.S. (4 Wheat.) 316. *But see* United States v. Darby, 312 U.S. 100, 124 (1941) (taking the more modest view that the Tenth Amendment merely offers "a truism that all is retained which has not been surrendered").

18. U.S. CONST. art. II, § 2, cl. 2.

19. *See* Curtis A. Bradley, *The Treaty Power and American Federalism*, 97 MICH. L. REV. 390, 391–92 (1998).

20. U.S. CONST. art. VI, cl. 2.

21. *See* United States v. Pink, 315 U.S. 203, 230 (1942); *see also* United States v. Belmont, 301 U.S. 324, 331 (1937).

22. *See* Missouri v. Holland, 252 U.S. 416 (1920) (upholding a migratory bird protection statute as a valid implementation of a treaty with Great Britain, even if the statute exceeded Congress's domestic lawmaking powers as understood at that time).

23. Treaty Relating to Boundary Waters Between the United States and Canada, U.S.-Gr. Brit., Jan 11, 1909, 36 Stat. 2448 [hereinafter Boundary Waters Treaty].

24. Great Lakes Water Quality Agreement, U.S.-Can., Apr. 15, 1972, 23 U.S.T. 301 [hereinafter 1972 Great Lakes Water Quality Agreement]; Great Lakes Water Quality Agreement, U.S.-

Signed in 1909, the Boundary Waters Treaty has been the foundation for transboundary United States and Canadian water management for more than a century.[25] The Treaty establishes mutual obligations to protect the shared natural resource of the Great Lakes, provides for dispute resolution mechanisms, establishes procedures for investigational capacity and information exchange between the two countries, and creates an international investigative and adjudicative body called the International Joint Commission (IJC).[26]

The process that led to the negotiation and signing of the Boundary Waters Treaty began in 1903, when the United States and Canada established the International Waterways Commission to address potentially conflicting rights in the countries' shared waterways.[27] The International Waterways Commission drafted a proposed treaty that would govern uses of shared boundary waters and create an international body to further advance protection of boundary waters.[28] The proposal, modified through negotiations, eventually led to the Boundary Waters Treaty of 1909.

"Boundary Waters" are defined under the Treaty

> as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.[29]

While tributary rivers and streams, as well as tributary groundwaters, are excluded from coverage, the Boundary Waters Treaty governs four of the five Great Lakes (Lakes Superior, Huron, Erie, and Ontario—as only Lake Michigan sits entirely within the United States) and hun-

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Can., Nov. 22, 1978, 30 U.S.T. 1384 [hereinafter 1978 Great Lakes Water Quality Agreement]; Protocol Amending the Agreement on Great Lakes Water Quality, U.S.-Can., Nov. 18, 1987, T.I.A.S. No. 11,551 [hereinafter 1987 Great Lakes Water Quality Agreement] (amending 1978 Great Lakes Water Quality Agreement, *supra*).

25. *See* Noah D. Hall, *Transboundary Pollution: Harmonizing International and Domestic Law*, 40 U. MICH. J.L. REFORM 681, 684, 693–95 (2007).

26. Noah D. Hall, *The Centennial of the Boundary Waters Treaty: A Century of United States–Canadian Transboundary Water Management*, 54 WAYNE L. REV. 1417, 1418–19 (2008).

27. Jennifer Woodward, Note, *International Pollution Control: The United States and Canada—The International Joint Commission*, 9 N.Y.L. SCH. J. INT'L & COMP. L. 325, 326 (1988) (citing INT'L JOINT COMM'N, SIXTH ANNUAL REPORT ON GREAT LAKES WATER QUALITY 10 (1978)).

28. *Id.* at 326–27.

29. Boundary Waters Treaty, *supra* note 23, preliminary art., 36 Stat. at 2448–49.

dreds of other rivers and lakes along the United States–Canada border.[30]

The principle concern at the time the Boundary Waters Treaty was negotiated was navigation and access to boundary waters, not environmental management.[31] Thus, Article I of the Boundary Waters Treaty begins:

> The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.[32]

The Boundary Waters Treaty goes far beyond ensuring navigation and access, and establishes international legal rules for pollution and use of shared boundary waters. Article IV provides that the parties agree "that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."[33] Originally, this provision of the treaty wholly forbade water pollution with transboundary consequences, but after objections from the U.S. Senate and Secretary of State the language was modified to its current form.[34] The United States' representatives were opposed to the creation of an international body with the authority to police transboundary pollution.[35] The United States eventually signed the Treaty only after Canada assured the concerned senators that the pollution provision would only be enforced in more serious cases.[36] Nonetheless, despite the limitations of the Boundary Waters Treaty's antipollution provision, Article IV establishes a clear standard for limiting pollution in transboundary waters—and this principle has had resounding effects over the course

30. *See* Woodward, *supra* note 27, at 327 n.14 ("Boundary waters other than the Great Lakes include the St. Croix River, between Maine and New Brunswick, and the Okanagan, Osoyoos, and Skagit Rivers, between Washington and British Columbia.").

31. *See id.* at 327 (citing F.J.E. Jordan, *Great Lakes Pollution: A Framework for Action*, 5 OTTAWA L. REV. 65, 67 (1971)); *see also* Stephen J. Toope & Jutta Brunnée, *Freshwater Regimes: The Mandate of the International Joint Commission*, 15 ARIZ. J. INT'L & COMP. L. 273, 277 (1998).

32. Boundary Waters Treaty, *supra* note 23, art. I, 36 Stat. at 2449.

33. *Id.* art. IV, 36 Stat. at 2450.

34. Hall, *supra* note 26, at 1421.

35. *Id.*

36. *Id.*

of the last century in defining international environmental law between the United States and Canada.[37]

Article III of the Boundary Waters Treaty provides that "no . . . uses or obstructions or diversions . . . of boundary waters . . . affecting the natural level or flow of boundary waters . . . shall be made except by authority of the United States or the Dominion of Canada . . . with the approval . . . of [the International Joint Commission]."[38] In other words, whenever an actor in either the United States or Canada wishes to take action that will affect the flow or level of water in the other country, the matter must be referred to the International Joint Commission.

The International Joint Commission is a six member investigative and adjudicative body comprised of three political appointees each from the United States and Canada.[39] While the IJC has been commended for its objectivity and leadership on environmental issues, it is severely limited in its ultimate adjudicative power. Article X of the Boundary Waters Treaty requires a reference from both countries for a binding arbitral decision, and the consent of the U.S. Senate is required for such action.[40] Thus, if Canada alleges that American industries and cities are polluting boundary waters to the injury of Canada's citizens, both Canada and a two-thirds majority of the U.S. Senate must agree to submit the matter to the IJC.[41] This has never occurred in the history of the Boundary Waters Treaty.[42]

While the binding dispute resolution provision has never been invoked, the United States and Canada have referred dozens of issues to the IJC for nonbinding investigative reports and studies pursuant to Boundary Waters Treaty Article IX,[43] which provides:

> The High Contracting Parties further agree that any other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from time to time to the International Joint Commission for examination and report, whenever either the Government of the United States or the Government of the Dominion of Canada shall request that such questions or matters of difference be so referred.

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37. *Id.*

38. Boundary Waters Treaty, *supra* note 23, art. III, 36 Stat. at 2449.

39. *See id.* art. VII, 36 Stat. at 2451.

40. *Id.* art. X, 36 Stat. at 2453.

41. *Cf.* U.S. CONST. art. II, § 2, cl. 2.

42. Hall, *supra* note 26, at 1441.

43. *Id.* at 1422.

> The International Joint Commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.
>
> Such reports of the Commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award.[44]

The Boundary Waters Treaty only requires a reference from one of the countries to invoke the Article IX process, but as a matter of custom it has always been done bilaterally with the support of both countries (consent of the U.S. Senate is not required because the U.S. Secretary of State has this authority).[45] The support of both countries gives the IJC's reports and recommendations credibility and helps provide sufficient funding for its efforts. With this process, the IJC has played a valuable role in proactively addressing emerging environmental harms and disputes, and gained respect for its impartial technical work.[46]

The Boundary Waters Treaty and its provisions regarding pollution and the responsibilities of the IJC as international overseer of the health of the Great Lakes ultimately led to the creation of the Great Lakes Water Quality Agreement.[47] The Great Lakes Water Quality Agreement "is considered to be a standing reference under the Boundary Waters Treaty," expanding on the terms of the original treaty and updating it for the modern era.[48] It is the most relevant executive agreement for Great Lakes governance.

The Great Lakes Water Quality Agreement was drafted in response to a 1964 joint reference to the IJC on pollution in the Great Lakes.[49] Concern over pollution in the Great Lakes had also led the IJC to hold hearings on the issue in 1969 and issue its final report on the subject in 1970.[50] As a result of this report and growing public demand, the United States and Canada formed a joint working group that would eventually craft the Great Lakes Water Quality Agreement.[51]

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44. Boundary Waters Treaty, *supra* note 23, art. X, 36 Stat. at 2452.
45. Hall, *supra* note 26, at 1422.
46. *Id.*
47. *See* BOTTS & MULDOON, *supra* note 3, at 13.
48. *Id.* at 15–16.
49. *See id.* at 13–14.
50. *Id.* at 14.
51. *Id.* at 15.

In 1972, Canadian Prime Minister Pierre Trudeau and U.S. President Richard Nixon signed the first Great Lakes Water Quality Agreement,[52] which focused on phosphorous pollution. The purpose of the original Great Lakes Water Quality Agreement was to create a special new regime to clean and protect the Great Lakes.[53] The 1972 Agreement focused on dealing with eutrophication in the lower Lakes caused by phosphorous discharges. In addition to this overarching goal, the 1972 Agreement also set more specific water quality objectives for the new regime, such as regulation of municipal sewage discharges, new requirements for industrial waste, regulations for discharges from ships, etc.[54] Additionally, the 1972 Agreement and the water quality governance it created aimed to substantially eliminate a number of specific toxins, such as mercury and oil.[55]

The 1972 Agreement also gave more responsibilities to the IJC. In addition to its original duties stemming from the Boundary Waters Treaty, the IJC became responsible for the analysis and dissemination of information relating to water quality and the effectiveness of water quality programs; providing advice to the United States, Canada, and their state and provincial governments; and reporting annually on the progress of the Agreement's water quality goals.[56] However, the two federal governments (specifically the U.S. Environmental Protection Agency and Environment Canada), not the IJC, have primary responsibility for implementing the programs and achieving the objectives of the Great Lakes Water Quality Agreement.[57]

In 1978, Canada and the United States expanded the Great Lakes Water Quality Agreement (and, by extension, the Boundary Waters Treaty) yet again. The purpose of the 1978 iteration of the Great Lakes Water Quality Agreement was "to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem," and it was "the policy of the Parties that . . . [t]he discharge of toxic substances in toxic amounts be prohibited and the discharge of any or all persistent toxic substances be virtually eliminated."[58]

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52. 1972 Great Lakes Water Quality Agreement, *supra* note 24; *see also* BOTTS & MULDOON, *supra* note 3, at 15.

53. *See id.*

54. *See* Joseph W. Dellapenna, *The Great Lakes*, *in* 1 WATERS AND WATER RIGHTS § 50.06 (Amy L. Kelley ed., 3d ed. 2011).

55. *Id.*

56. BOTTS & MULDOON, *supra* note 3, at 17.

57. 1972 Great Lakes Water Quality Agreement, *supra* note 24, art. V, 23 U.S.T. at 307–08.

58. 1978 Great Lakes Water Quality Agreement, *supra* note 24, art. II, 30 U.S.T. at 1387.

In contrast to the 1972 Agreement, the 1978 version sought to improve water quality in the Great Lakes via an ecosystems approach.[59] This meant that it was no longer simply the policy of the Great Lakes Water Quality Agreement to improve water chemistry through pollution control, but to restore the ecological integrity of the Great Lakes.[60] Additionally, the "virtual elimination" of toxins in the Great Lakes similarly expanded the scope of the original Agreement so that the IJC and the other implementers of Great Lakes water quality policy could work toward the reduction of the ambient levels of toxic substances and attempt to reduce the actual use of the substances through the promotion of pollution prevention and cleaner production processes.[61]

The Great Lakes Water Quality Agreement continued to evolve over the decades since the 1979 amendment. In 1987, in response to the *International Joint Commission Report on Great Lakes Diversions and Consumptive Use*, the parties to the Boundary Waters Treaty and the Great Lakes Water Quality Agreement entered into another protocol to deal with the emerging problems that the *Report* identified: excess nutrients, airborne toxic pollutants, accumulated sediments, and climate change uncertainties.[62] The new protocol expanded the scope of the 1978 Agreement to encompass responses to the newly identified issues, addressed the problem of nonpoint source pollution, and laid the foundations for the development of near-shore and open-water management plans.[63] The 1987 amendment thus added to and reinforced existing provisions.

Canada and the United States expanded the Great Lakes Water Quality Agreement yet again in 2012 with another protocol in order to address a number of new areas of concern, such as increased phosphorous loadings, harmful vessel discharges, invasive species, habitat degradation, and climate change impacts.[64]

Despite the lofty goals of the Great Lakes Water Quality Agreement, its implementation has been undermined by its status as an executive agreement (lacking U.S. Senate approval) and its failure to

59. *See* BOTTS & MULDOON, *supra* note 3, at 67.

60. *Id.* at 67–68.

61. *Id.* at 68–69.

62. 1987 Great Lakes Water Quality Agreement, *supra* note 24.

63. *See id.*

64. Protocol Amending the Agreement on Great Lakes Water Quality, U.S.-Can., at annex 4–8, Sept. 7, 2012 [hereinafter 2012 Great Lakes Water Quality Agreement], *available at* http://www.epa.gov/glnpo/glwqa/20120907-Canada-USA_GLWQA_FINAL.pdf.

contain enforcement provisions.[65] The federal courts have refused to enforce the terms of the Agreement on private parties.[66] Despite its legal shortcomings, the Great Lakes Water Quality Agreement has given citizens an increased role in shaping policy to address transboundary pollution in the Great Lakes through increased opportunity for public participation in decision making.[67]

B. Federal Regulatory Power

Of the federal government's enumerated powers, the authority of Congress to regulate interstate commerce has been most central to federal environmental lawmaking and natural resource management. Article I, Section 8 of the Constitution authorizes Congress to "regulate commerce with foreign nations and among the several states, and with the Indian tribes."[68] The Commerce Clause has been broadly interpreted by the Supreme Court to reach almost anything that implicates the national economy, including most environmental harms.[69] When it comes to water, the Supreme Court has yet to find a limit to congressional authority pursuant to the Commerce Clause. From regulating the fill of wetlands[70] to managing public access to artificially created waterbodies,[71] the Supreme Court has sanctioned broad and expansive federal lawmaking regarding water resources.

The most significant exercise of federal regulatory power relevant to the Great Lakes was the passage of the Clean Water Act in 1972.[72] The Clean Water Act seeks to create a partnership between the states and the federal government "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[73] To achieve this lofty goal, the Act creates several regulatory and funding programs.

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65. *See* Noah D. Hall, *The Evolving Role of Citizens in United States–Canadian International Environmental Law Compliance*, 24 PACE ENVTL. L. REV. 131, 149 (2007); *see also* Edith Brown Weiss, *New Directions for the Great Lakes Water Quality Agreement: A Commentary*, 65 CHI.-KENT L. REV. 375, 377 (1989).

66. *See, e.g.*, Lake Erie Alliance for the Prot. of the Coastal Corridor v. U.S. Army Corps of Eng'rs, 526 F. Supp. 1063, 1077 (W.D. Pa. 1981) ("Since it does not appear . . . that inadequate consideration was given to this matter, we find no reason to interfere in the discretionary duties of the Army Corps of Engineers."); Am. Iron & Steel Inst. v. EPA, 115 F.3d 979, 1001 (D.C. Cir. 1997) (denying the petition "insofar as it challenges the reasonable potential procedures").

67. *See* Hall, *supra* note 65, at 150.

68. U.S. CONST. art. I, § 8, cl. 3.

69. *See, e.g.*, Hodel v. Va. Surface Mining & Reclamation Ass'n, Inc., 452 U.S. 264 (1981).

70. *See* Solid Waste Agency of N. Cook Cnty. v. Army Corps of Eng'rs, 531 U.S. 159 (2001).

71. *See* Kaiser Aetna v. United States, 444 U.S. 164, 171–72 (1979).

72. Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act), Pub. L. No. 92-500, 86 Stat. 816 (codified as amended at 33 U.S.C. §§ 1251–1387 (2006)).

73. 33 U.S.C. § 1251(a).

Regulation of water pollution under the Clean Water Act begins with "effluent limitations" promulgated by the U.S. Environmental Protection Agency. These limitations are based on technological standards that restrict the quantities, rates, and concentrations of pollutants discharged from point sources.[74] The effluent limitations are supplemented by "water quality standards" promulgated by the states to establish the desired condition of a waterway.[75] The water quality standards are necessary to supplement the technology-based effluent limitations "to prevent water quality from falling below acceptable levels."[76] Water quality standards have become more important as a key regulatory tool to address the cumulative impact of nonpoint sources, such as agricultural run-off and erosion from timber harvesting, that are not subject to the technology-based effluent limitations.[77] These mechanisms are enforced on "point sources" (such as pipes and sewers) that discharge pollution into navigable waters through National Pollutant Discharge Elimination System (NPDES) permits.[78]

The baseline pollution standards that govern permits issued under the NPDES are exclusively within the purview of the EPA, but states may choose to implement stricter standards—subject to the approval of the EPA Administrator—if they so choose.[79] Congress delegated to the EPA the job of permit issuance and administration.[80] However, the Clean Water Act authorizes each state to establish "its own permit program for discharges into navigable waters within its jurisdiction" and permitting authority is delegable to the states through the adoption of individual state programs.[81] Over the past forty years, the ad-

74. *See id.* §§ 1311, 1314.

75. *Id.* § 1313. However, if the states fail to promulgate adequate water quality standards, the federal EPA may be forced to fill the void. Section 303(c)(4)(B) of the Clean Water Act provides that the Administrator shall propose regulations with "a revised or new water quality standard for the navigable waters involved . . . in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of this chapter." *Id.* § 1313(c)(4); s*ee also* Gulf Restoration Network v. Jackson, No. 12-677, 2013 WL 5328547 (E.D. La. Sept. 20, 2013) (holding that the EPA must make a "necessity determination" regarding water quality standards under the Clean Water Act in response to a petition for rulemaking).

76. EPA v. California *ex rel.* State Water Res. Control Bd., 426 U.S. 200, 205 n.12 (1976).

77. *See* Pronsolino v. Nastri, 291 F.3d 1123, 1125–26 (9th Cir. 2002).

78. *See* 33 U.S.C. §§ 1311(a), 1342, 1362(12).

79. *See id.* § 1316(b)(1)(B) ("[T]he Administrator shall propose . . . regulations establishing Federal standards of performance for new sources . . . ."); *see also id.* § 1370.

80. *See id.* § 1342(a) ("Except as provided in sections 1328 and 1344 of this title, the Administrator may, after opportunity for public hearing issue a permit for the discharge of any pollutant, or combination of pollutants . . . .").

81. *Id.* § 1342(b) ("At any time after the promulgation of the guidelines required by subsection (i)(2) of section 1314 of this title, the Governor of each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and admin-

ministration of the federal Clean Water Act has thus shifted primarily to the states. As of 2013, forty states administer their own NPDES program for the issuance of permits under the Clean Water Act.[82]

However, states are still subject to federal oversight, especially with respect to the administration of their programs and interstate pollution. The EPA can refuse to authorize state permit programs that do not insure that other states with potentially affected waters (such as the Great Lakes), as well as the public, "receive notice of each application for a permit and . . . [an] opportunity for public hearing before a ruling on each such application."[83] State permit programs must also "insure that any State . . . whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State" and to the EPA Administrator.[84]

In addition to establishing permitting authority, the Clean Water Act authorizes the EPA to make grants to states, organizations, and individuals for research, investigations, surveys, and studies.[85] The EPA is also authorized to conduct its own research.[86] With respect to enforcement of NPDES permit conditions, enforcement actions are generally within the purview of the EPA, but states are responsible for the enforcement of permits issued under state NPDES programs.[87] Also, civil actions may be commenced by citizens for violations of pollutant standards.[88]

Both civil and criminal penalties may result from enforcement actions taken by the EPA or the states pursuant to the Clean Water Act. In the case of civil actions, the EPA "Administrator is authorized to commence a civil action for appropriate relief, including a permanent or temporary injunction, for any violation for which he is authorized to issue a compliance order."[89] For criminal violations, there are varying degrees of penalties based on the *mens rea* of the violator. Negligent violations may be punished by fines "of not less than $2,500 nor

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ister under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the attorney for those State water pollution control agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State, or the interstate compact, as the case may be, provide adequate authority to carry out the described program.").

82. *Clean Water Act (CWA)*, U.S. ENVTL. PROTECTION AGENCY, http://www.epa.gov/agriculture/lcwa.html (last visited Feb. 11, 2014).

83. 33 U.S.C. § 1342(b)(3).

84. *Id.* § 1342(b)(5).

85. *Id.* § 1254(b)(3).

86. *Id.* § 1254(b)(1).

87. *Id.* § 1319(a).

88. *Id.* § 1365.

89. 33 U.S.C. § 1319(b).

more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or by both."[90] Knowing violations "shall be punished by a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or by both."[91] Knowing endangerment as a result of violations is punishable by "a fine of not more than $250,000 or imprisonment of not more than 15 years, or both."[92] Subsequent violations may result in more stringent punishments.[93]

In addition to the civil and criminal punishments for violations of water quality standards under the Clean Water Act, downstream states may also oppose out of state discharges if those discharges are similarly in violation of applicable permits or standards.[94] This regulatory prohibition was confirmed by the Supreme Court in *Arkansas v. Oklahoma*: "Although these provisions do not authorize the downstream State to veto the issuance of a permit for a new point source in another State, the Administrator retains authority to block the issuance of any state-issued permit that is 'outside the guidelines and requirements' of the Act."[95]

C. Supremacy of Federal Law

While the federal government is constitutionally limited, when it acts pursuant to its enumerated powers, its laws and treaties are supreme over state laws. The Supremacy Clause provides:

> This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.[96]

The Supremacy Clause was another response to the failure of the Articles of Confederation, which gave Congress the power to conclude treaties, but without a mechanism for their enforcement.[97] The Supreme Court has long relied on the Supremacy Clause in striking

90. *Id.* § 1319(c)(1).
91. *Id.* § 1319(c)(2).
92. *Id.* § 1319(c)(3)(A).
93. *See id.* § 1319(b)–(c).
94. *See* 40 C.F.R. § 122.4(d) (2013) ("No permit may be issued . . . [w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States . . . .").
95. Arkansas v. Oklahoma, 503 U.S. 91, 102 (1992) (quoting 33 U.S.C. § 1342(d)(2)).
96. U.S. CONST. art. VI, cl. 2.
97. *See* Carlos Manuel Vásquez, *Treaties as Law of the Land: The Supremacy Clause and the Judicial Enforcement of Treaties*, 122 HARV. L. REV. 599, 617 (2008).

down state laws that conflict with federal laws and the objectives of Congress.[98] States possess sovereignty concurrent with the federal government, but that authority is subject to the limitations imposed on them by the Supremacy Clause and the laws promulgated by the Congress.[99]

Thus, when a state law is challenged, courts may find that federal law preempts the state law in three different ways. First, the express preemption of state law by federal law occurs when Congress has explicitly acted with intent to displace state law.[100] "Congress' intent to supplant state authority in a particular field may be express in the terms of the statute."[101] This category of preemption is often the most readily identifiable form of preemption. Express preemption is rare in environmental law, with the notable exception of nuclear power regulation pursuant to the Atomic Energy Act of 1954.[102] The most notable example of express preemption in Great Lakes governance is the congressional ban on Great Lakes drilling enacted in 2005, which prohibited states from issuing permits or leases for new oil and gas drilling in the Great Lakes.[103] Prior to the congressional ban (and several previous temporary moratoria[104]), oil and gas drilling in the U.S. waters of the Great Lakes was left to the individual states.[105]

Second, a court may find implied field preemption absent an express declaration from Congress that it intends to preempt state law "if 'the Act of Congress . . . touch[es] a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject.'"[106] Finally,

98. *See, e.g.*, Gibbons v. Ogden, 22 U.S. (Wheat. 9) 1 (1824).

99. Tafflin v. Levitt, 493 U.S. 455, 458 (1990). *See generally* Bradford R. Clark, *The Supremacy Clause as a Constraint on Federal Power*, 71 GEO. WASH. L. REV. 91 (2003).

100. Wis. Pub. Intervenor v. Mortier, 501 U.S. 597, 604–05 (1991).

101. *Id.*

102. 42 U.S.C. §§ 2011–2296 (2006); *see also* N. States Power Co. v. Minnesota, 447 F.2d 1143 (8th Cir. 1971), *aff'd mem.*, 405 U.S. 1035 (1972).

103. Section 386 of the Energy Policy Act of 2005 provides that "no federal or state permit or lease shall be issued for new oil and gas slant, directional, or offshore drilling in or under one or more of the Great Lakes." Energy Policy Act of 2005, Pub. L. No. 109-58, § 386, 119 Stat. 594, 744 (codified at 42 U.S.C. § 15941 (2006)).

104. In 2001, Congress enacted a two-year moratorium on federal and state permits for drilling in the Great Lakes. Energy and Water Development Appropriations Act of 2002, Pub. L. No. 107-66, § 503, 115 Stat. 486, 512 (2001). The moratorium was extended in 2003, *see* Consolidated Appropriations Resolution of 2003, Pub. L. No. 108-7, § 505, 117 Stat. 11, 158, and again in 2005. *See* Consolidated Appropriations Act of 2005, Pub. L. No. 108-447, § 504, 118 Stat. 2809, 2963.

105. *See* Noah D. Hall, *Oil and Freshwater Don't Mix: Transnational Regulation of Drilling in the Great Lakes*, 38 B.C. ENVTL. AFF. L. REV. 305, 307 (2011).

106. *Mortier*, 501 U.S. at 605 (alterations in original) (quoting Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947)).

"[e]ven when Congress has not chosen to occupy a particular field, pre-emption may occur to the extent that state and federal law actually conflict."[107] In other words, if it is impossible to comply with both the federal and state laws, the federal law will preempt the conflicting state law.

Consequently, the Supremacy Clause potentially complicates and impedes state efforts to manage the Great Lakes. Numerous federal water quality laws, regulations promulgated by agencies that possess jurisdiction over the Great Lakes (such as the EPA and the U.S. Coast Guard), treaties with Canada, and other impositions of federal power may come at the expense of state lawmaking. As a practical matter, the federal government often exercises its powers in ways that encourage states to protect and manage the Great Lakes.

III. State Powers and Interstate Governance

Eight states share the Great Lakes, and thus state sovereignty and interstate governance have been central in shaping modern Great Lakes law and policy. The story of the Great Lakes states begins with the Northwest Ordinance of 1787, one of the most important achievements of the United States Continental Congress.[108] The Ordinance created the procedure by which states in what would eventually become the Midwest would be admitted to the Union.[109] The drafters of the Ordinance and the iterations that preceded it were very concerned with how to equitably integrate new states into the United States and bind those newly admitted states to the existing ones.[110] Ultimately, the Northwest Ordinance provided the procedure by which thirty-one of the fifty states entered the Union. It prohibited slavery in those states, and established the equal-footing doctrine, which will be discussed in great detail below.[111]

In 1784, Thomas Jefferson chaired a committee that made the first attempt to devise a method to accomplish this integration.[112] Jefferson's Plan for Government of the Western Territory established a

107. *Id.*

108. *See generally* David G. Chardavoyne, *The Northwest Ordinance and Michigan's Territorial Heritage*, *in* The History of Michigan Law 13 (Paul Finkelman & Martin J. Hershock eds., 2006).

109. *Id.* at 13–14.

110. Peter S. Onuf, Statehood and Union: A History of the Northwest Ordinance 44–45 (1987).

111. Dennis P. Duffy, Note, *The Northwest Ordinance as a Constitutional Document*, 95 Colum. L. Rev. 929, 930–31 (1995).

112. Chardavoyne, *supra* note 108, at 14.

formula for determining new state boundaries.[113] The government would also buy land from the Indians and sell it to settlers of the Northwest Territories.[114] Once the population of the territories reached 20,000 "free inhabitants," the residents of that region could form a state, and once the population of that state was equal to "the least numerous of the thirteen original states," the fledgling state would be admitted to the Union on equal footing with all of the other existing states.[115]

Congress ultimately did not implement Jefferson's plan, instead electing a route with a more nebulous definition of boundaries and with a more distant promise of statehood than that offered by Jefferson.[116] Thus the Northwest Ordinance of 1787 was drafted and imposed on the Territories, many of which would eventually become the Great Lakes states that we know today.[117]

The 1787 Ordinance provided for three stages on the path to statehood. In the first stage, the congressionally appointed governor and a number of judges in the region would function as executive, judicial, and legislative officers, with Congress retaining veto power over the acts of these officials.[118] The second stage began when the population of the district reached "five thousand free male inhabitants of full age" at which time the district could elect its own general assembly, with one representative for every five hundred free male inhabitants.[119] Additionally, instead of the latitudinally and longitudinally based plan described by Jefferson, the metes and bounds of the new northwestern states were not mathematically provided for in the new

113. ONUF, *supra* note 110, at 46–47 ("That so much of the territory ceded or to be ceded by individual states to the United States, as is already purchased or shall be purchased of the Indian inhabitants, and offered for sale by Congress, shall be divided into distinct states, in the following manner, as nearly as such cessions will admit; that is to say, by parallels of latitude, so that each state shall comprehend from north to south two degrees of latitude, beginning to count from the completion of forty-five degrees north of the equator; and by meridians of longitude, one of which shall pass through the lowest point of the rapids of Ohio, and the other through the western cape of the mouth of the Great Kanhaway: but the territory eastward of this last meridian, between the Ohio, Lake Erie, and Pennsylvania, shall be one state whatsoever may be its comprehension of latitude. That which may lie beyond the completion of the 45th degree between the said meridians, shall make part of the state adjoining it on the south: and that part of the Ohio, which is between the same meridians coinciding nearly with that parallel as a boundary line." (quoting THOMAS JEFFERSON, PLAN FOR GOVERNMENT OF THE WESTERN TERRITORY (1784)).

114. Chardavoyne, *supra* note 108, at 14.

115. *Id.*; *see also* ONUF, *supra* note 110, at 46.

116. ONUF, *supra* note 110, at 55.

117. Chardavoyne, *supra* note 108, at 14–15; *see also* ONUF, *supra* note 110, at 60–61 (reproducing the complete text of the Northwest Ordinance of 1787).

118. Chardavoyne, *supra* note 108, at 15.

119. *See* Northwest Ordinance of 1787 § 9, *reprinted in* 1 U.S.C., at LV, LVI (2006).

Ordinance; rather, the Ordinance stated that there would be "not less than three nor more than five States" and provided four boundaries defined by rivers and more arbitrary lines between landmarks.[120]

The final stage was full statehood. The settlements in the Northwest attained this stage once their population reached sixty thousand free inhabitants.[121] Additionally, in prescribing the final step toward statehood, the Ordinance declared that these new states would enter the Union on equal footing with the existing states.[122] The equal-footing provisions of the Northwest Ordinance were very important to the eventual development of the new states because it assured settlers that they would not be treated as mere settlers if they moved to the Northwest Territories, but would be given full recognition as citizens, with all of the attendant rights and civil liberties of complete citizenship.[123] The equal-footing doctrine also became the basis for granting the states the same title rights in submerged lands as the original thirteen colonies.

A. Equal-Footing Doctrine

The equal-footing doctrine established in the Northwest Ordinance gains significance in light of the rule for state title to beds below navigable waters. State title to the beds under navigable waters has origins in English common law.[124] Historically, English law gave the crown title to waters subject to the ebb and flow of the tide, while private riparians generally owned title to the beds below nontidal waters.[125] American courts, however, found that the "tidal rule of 'navigability' for sovereign ownership of riverbeds, while perhaps appropriate for England's dominant coastal geography, was ill suited to the United States with its vast number of major inland rivers upon which navigation could be sustained."[126] The Supreme Court eventually "recognized 'the now prevailing doctrine' of state sovereign 'title in the soil of rivers really navigable.' This title rule became known as 'navigability in fact.'"[127] Thanks to the equal-footing doctrine, the ti-

120. *Id.* art. V, at LVII.

121. *Id.*

122. *Id.*

123. Matthew J. Festa, *Property and Republicanism in the Northwest Ordinance*, 45 ARIZ. ST. L.J. 409, 459 (2013).

124. Shively v. Bowlby, 152 U.S. 1, 13 (1894).

125. *See* PPL Mont., LLC v. Montana, 132 S. Ct. 1215, 1226–27 (2012).

126. *Id.* (citing LOUIS HOUCK, LAW OF NAVIGABLE RIVERS 26–27, 31–35 (1868); Packer v. Bird, 137 U.S. 661, 667–69 (Boston, Little, Brown, & Co. 1891)).

127. *Id.* (citations omitted) (quoting *Shively*, 152 U.S. at 31) (citing Barney v. Keokuk, 94 U.S. 324, 336 (1877) ("In this country, as a general thing, all waters are deemed navigable which are really so . . . .")).

tle rule applies not just to the thirteen original states,[128] but to all states subsequently admitted to the Union.[129]

The Supreme Court recently summarized the title consequences of the equal-footing doctrine as follows:

> Upon statehood, the State gains title within its borders to the beds of waters then navigable (or tidally influenced . . .). It may allocate and govern those lands according to state law subject only to "the paramount power of the United States to control such waters for purposes of navigation in interstate and foreign commerce." The United States retains any title vested in it before statehood to any land beneath waters not then navigable (and not tidally influenced), to be transferred or licensed if and as it chooses.[130]

To determine whether a waterbody is navigable for purposes of state title, the Supreme Court first looks to the "navigable in fact" test from *The Daniel Ball*:

> Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.[131]

But that is not the end of the inquiry. For purposes of state title under the equal-footing doctrine, navigability is determined at the time of statehood using historical evidence to determine the "natural and ordinary condition" of the water.[132] This determination regarding navigability in fact, at the time of statehood, is a matter of federal law.[133] Congress has made explicit that the individual states have title to the Great Lakes bottomlands pursuant to the federal Submerged Lands

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128. *Cf.* Martin v. Waddell, 41 U.S. (16 Pet.) 367, 410 (1842) (noting that the thirteen original states "hold the absolute right to all their navigable waters and the soils under them").

129. *See, e.g.*, Oregon *ex rel.* State Land Bd. v. Corvallis Sand & Gravel Co., 429 U.S. 363, 374 (1977); United States v. Texas, 339 U.S. 707, 716 (1950); *Shively*, 152 U.S. at 26–31; Knight v. U.S. Land Ass'n, 142 U.S. 161, 183 (1891); Pollard v. Hagan, 44 U.S. (3 How.) 212, 228–29 (1845).

130. *PPL Mont.*, 132 S. Ct. at 1227–28 (citations omitted) (quoting United States v. Oregon, 295 U.S. 1, 14 (1935)).

131. The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870). Note that the *Daniel Ball* navigable-in-fact test is used, in slightly different permutations, to determine navigability for Commerce Clause jurisdiction and the scope of congressional regulatory authority. *See PPL Mont.*, 132 S. Ct. at 1228–29. The variations in the application of the federal navigability test can be dizzying, but Justice Kennedy's decision in *PPL Montana* offers an excellent summary. *See id.* In summary, the key aspect of the federal navigability test for state title is determining the natural condition of the waterway *at the time of statehood. See id.* at 1228 (citing United States v. Utah, 283 U.S. 64, 75 (1931)).

132. *PPL Mont.*, 132 S. Ct. at 1233 (quoting *Utah*, 283 U.S. at 76).

133. *Id.*; *see also Oregon*, 295 U.S. at 14; *Utah*, 283 U.S. at 75.

Act.[134] However, the states have discretion to determine the exact bounds and implications of state title to submerged lands, and this impacts Great Lakes shoreline ownership and protection.

Michigan and Wisconsin have adopted the ordinary high water mark as the upland boundary of their state's submerged lands for their respective Great Lakes shoreline.[135] The ordinary high water mark lies where "the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."[136] Rejecting this approach, Ohio uses the "natural shoreline," defined as "the line at which water usually stands when free from disturbing causes," as the boundary between privately owned uplands and the state-owned lakebed.[137] When a state uses the high water mark or a similar boundary to determine state versus private ownership, it essentially opens up portions of the beach (above the water's edge up to the high water mark) to the public, creating opportunities for beach walking and other land-based recreation that would not otherwise be possible.[138] Conversely, putting the boundary at the water's edge may limit the state's ability to regulate shoreline property without triggering a regulatory taking.

B. Interstate Compacts

The U.S. Constitution allows states to aggregate their authority with the permission of Congress through the Compact Clause. A compact is essentially a contract between states, subject to federal approval.[139] The compact mechanism is provided in Article I, Section Ten, of the Constitution, which declares that "[n]o State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State, or with a foreign Power."[140]

Congressional approval of compacts is critical to the federal–state balance of power, as interstate compacts tend to increase the power of the states at the expense of the federal government. Once effective, interstate compacts have the full force and supremacy of federal

134. 43 U.S.C. § 1311(a) (2006).

135. *See, e.g.*, Glass v. Goeckel, 703 N.W.2d 58, 71–73 (Mich. 2005); State v. Trudeau, 408 N.W.2d 337, 342 (Wis. 1987).

136. *See Glass*, 703 N.W.2d at 62.

137. State *ex rel.* Merrill v. Ohio Dep't of Natural Res., 955 N.E.2d 935, 939 (Ohio 2011).

138. *See Glass*, 703 N.W.2d at 58.

139. Texas v. New Mexico, 482 U.S. 124, 128 (1987).

140. U.S. CONST. art. I, § 10, cl. 3.

law.[141] This allows the terms of a compact to be enforced in federal court and prevents states from ignoring their compact duties.[142] Future Supreme Court Justice Felix Frankfurter and James Landis first suggested using compacts to manage interstate natural resources over eighty years ago.[143] There are now approximately fifty interstate compacts that in some way relate to interstate waters[144] and two specific compacts relevant to the Great Lakes.

Congress approved the first Great Lakes Basin Compact in 1968, although it was negotiated by the Great Lakes states and provinces two decades earlier.[145] It includes each of the eight Great Lakes states as members and creates a Great Lakes Commission comprised of representatives from the member states.[146] As negotiated by the states, the Great Lakes Basin Compact included a provision to allow the provinces of Ontario and Quebec to join as parties.[147] However, to protect the federal interest in foreign relations, Congress explicitly refused to consent to that provision.[148] As a consolation prize, the Canadian provinces of Ontario and Quebec have recently been added as associate members.[149]

The purpose of the Great Lakes Basin Compact and the Great Lakes Commission is to gather data and make nonbinding advisory recommendations regarding research and cooperative programs for the Great Lakes.[150] The Great Lakes Commission can make recommendations regarding "uniform . . . laws, ordinances, or regulations relating to the development, use and conservation of the Basin's water resources."[151] However, this function is purely advisory—the Great Lakes Basin Compact makes clear that "no action of the [Great Lakes] Commission shall have the force of law in, or be binding upon, any party state."[152] Professor Joe Dellapenna describes this as a

141. *See* Culyer v. Adams, 449 U.S. 433, 438 (1981) (stating that congressional consent "transforms an interstate compact . . . into a law of the United States").

142. *See Texas*, 482 U.S. at 128.

143. *See* Felix Frankfurter & James M. Landis, *The Compact Clause of the Constitution—A Study in Interstate Adjustments*, 34 YALE L.J. 685 (1925).

144. Noah D. Hall, *Interstate Water Compacts and Climate Change Adaptation*, 5 ENVTL. & ENERGY L. & POL'Y J. 237, 259 (2010).

145. Great Lakes Basin Compact, Pub. L. No. 90-419, 82 Stat. 414 (1968).

146. *Id.* arts. II, IV, 82 Stat. at 414–16.

147. *Id.* art. II.B, 82 Stat. at 414.

148. *Id.* art. IX, § 2, 82 Stat. at 419.

149. *See* Mark Squillace & Sandra Zellmer, *Managing Interjurisdictional Waters Under the Great Lakes Charter Annex*, NAT. RESOURCES & ENV'T, Fall 2003, at 8, 9.

150. Great Lakes Basin Compact, art. VI(A), (G), (N), 82 Stat. at 417–18.

151. *Id.* art. VI(G), 82 Stat. at 417.

152. *Id.* art. VI(N), 82 Stat. at 418.

"we'll keep in touch" approach to interstate water management that rarely achieves the lofty goals set forth in such agreements.[153]

With the shortcomings of the 1968 Great Lakes Compact and more recent concerns over Great Lakes water diversions and water use,[154] the Great Lakes governors and premiers negotiated a new set of agreements that became the 2008 Great Lakes–St. Lawrence River Basin Water Resources Compact[155] and companion Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement.[156] The Agreement is a nonbinding policy between the American states and the Canadian provinces, implemented in Canada by the provinces and in the United States through the Compact. The Compact and Agreement use minimum standards for water use and withdrawals administered primarily under the authority of individual states and provinces, and create a governance structure that balances state sovereignty and regional management.

At the core of the Compact and Agreement are the common standards (referred to as the "Decision-making Standard"[157]) for new or increased water withdrawals of Great Lakes Basin water. The applicability of these standards is not limited to water taken directly from one of the Great Lakes. Rather, the compact broadly defines the waters of the Great Lakes to include all tributary surface and ground waters.[158]

The Compact takes two different approaches to managing new or increased water withdrawals in the Great Lakes Basin, based almost entirely on whether the water is used inside or outside of the Great Lakes Basin surface watershed boundary. Water use inside of the Great Lakes Basin is managed solely by the individual state, with limited advisory input from other states for very large consumptive uses.[159] Diversions of water for use outside of the Basin are subject to

153. Joseph W. Dellapenna, *Interstate Struggles Over Rivers: The Southeastern States and the Struggle Over the 'Hooch*, 12 N.Y.U. ENVTL. L.J. 828, 838–39 (2005).

154. *See generally* PETER ANNIN, THE GREAT LAKES WATER WARS (2006).

155. Great Lakes–St. Lawrence River Basin Water Resources Compact, Pub. L. No. 110-342, 122 Stat. 3739 (2008).

156. Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement (Dec. 13, 2005) [hereinafter Great Lakes Agreement], *available at* http://www.cglg.org/projects/water/docs/12-13-05/Great_Lakes-St_Lawrence_River_Basin_Sustainable_Water_Resources_Agreement.pdf.

157. *See* Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, § 4.11, 122 Stat. at 3755.

158. *See id.* § 1.2, 122 Stat. at 3742 (defining "Waters of the Basin or Basin Water").

159. *See id.* §§ 4.3, .6, 122 Stat. at 3749, 3752.

a spectrum of collective rules and approval processes, including a general prohibition on most diversions.[160]

The Great Lakes Compact requires the states to "create a program for the management and regulation of New or Increased Withdrawals . . . by adopting and implementing Measures consistent with the Decision-Making Standard" within five years.[161] States must set the threshold levels for regulation of water withdrawals to "ensure that uses overall are reasonable, that Withdrawals overall will not result in significant impacts . . . , and that all other objectives of the Compact are achieved."[162] If states fail to establish thresholds that comply with these requirements, a default threshold of regulating all new or increased withdrawals of 100,000 gallons per day or greater (averaged over any ninety-day period) is imposed.[163] The states must make reports to the Compact Council, which is comprised of the governor of each party state, regarding their implementation.[164] The Compact Council must then review the state programs and make findings regarding their adequacy and compliance with the compact.[165]

The Great Lakes Compact has a general prohibition on new or increased diversions of Great Lakes water.[166] The ban has several exceptions for interbasin transfers and diversions to nearby communities that either straddle the watershed divide or are within a country that straddles the watershed divide. All of the exceptions are subject to the "exception standard"[167] and additional process, review, and regional oversight. Most notably, large diversions are subject to the unanimous approval of the Compact Council (comprised of each of the governors).[168]

In addition to providing a mechanism for unanimous approval of the diversion exceptions, the Compact Council has numerous other powers and duties. Comprised of the governors of each party state (or their designated alternates), it can promulgate and enforce rules to

160. *See id.* §§ 4.8–.9, 122 Stat. at 3752.

161. *Id.* § 4.10(1), 122 Stat. at 3755.

162. *Id.*

163. Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, § 4.10(2), 122 Stat. at 3755.

164. *See id.* § 3.4(1), 122 Stat. at 3746.

165. *See id.* § 3.4(2), 122 Stat. at 3746–47.

166. *See id.* § 4.8, 122 Stat. at 3752.

167. The "exception standard" is substantively similar to the decision-making standard. *See id.* § 4.9(4), 122 Stat. at 3754.

168. *Id.* § 4.9(2)(c), 122 Stat. at 3753. The unanimous approval may include abstentions. *See id.* ("Council approval shall be given unless one or more Council Members vote to disapprove.").

implement its duties under the Compact.[169] The Compact Council also has broad authority to plan, conduct research, prepare reports on water use, and forecast water levels.[170] Perhaps most importantly, it can conduct special investigations and institute court actions, including enforcement.[171]

However, enforcement is not the sole domain of the Compact Council. The Great Lakes Compact contains broad and comprehensive enforcement provisions at both the state and interstate levels. Any aggrieved person can commence a civil enforcement action in the appropriate state court against a water user that has failed to obtain a required permit or has violated the prohibition on diversions.[172] Remedies include equitable relief and the prevailing party may recover reasonable attorney and expert witness fees.[173] Any person, including another state or province, can challenge a state action under the Compact (such as issuance of a permit) pursuant to state administrative law, with an express right of judicial review in state court.[174]

The broad enforcement provisions are complemented by similarly progressive public participation provisions. As with the minimum substantive decision-making standard, the Compact provides minimum procedural public process requirements for the party states and Compact Council. These include: public notification of applications with a reasonable time for comments; public accessibility to all documents (including comments); standards for determining whether to hold a public meeting or hearing on an application; and allowing open public inspection of all records relating to decisions.[175] The Compact also requires additional formal consultation with federally recognized Indian tribes in the relevant state.[176] In recognition of the tribes' status as sovereigns (discussed in Part IV), such consultation is handled primarily through either the Compact Council or Regional Body (discussed below).[177]

The Great Lakes Compact has no termination date; it remains in force unless terminated by a majority of the party states (five of the

169. *See* Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, §§ 2.1–.3, 3.3(1), 122 Stat. at 3744–46.

170. *Id.* § 3.2, 122 Stat. at 3746.

171. *Id.*

172. *Id.* § 7.3(3), 122 Stat. at 3761.

173. *See id.* § 7.3(3)(b)(ii), 122 Stat. at 3761–62.

174. *See id.* § 7.3(1), 122 Stat. at 3761.

175. *See* Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, § 6.2, 122 Stat. at 3760.

176. *Id.* § 5.1, 122 Stat. at 3759.

177. *See id.*

eight).[178] As is typical for interstate water compacts, it is very difficult to amend once enacted.[179] Amendments would require unanimous approval by all state legislative bodies and the consent of Congress.[180]

State–provincial cooperation is widely desired, but state leaders were well aware of the experience of the 1968 Compact and the failed attempt to include the Canadian provinces. To meet the goal of state–provincial cooperation without running afoul of constitutional treaty limitations, the governors and premiers developed a companion nonbinding good faith agreement that includes the provinces of Ontario and Quebec, the Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement.[181] This dual structure creates a legally and politically acceptable mechanism for cooperation with Canadian provinces.

State cooperation with Canadian provinces in the Great Lakes region has obvious ecological and policy benefits, but raises fundamental legal and political concerns. The Compact Clause of the Constitution, included in Article I, Section Ten, provides that "[n]o State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State, or with a foreign Power."[182] The Compact Clause also provides that "[n]o State shall enter into any Treaty, Alliance, or Confederation."[183] Thus, the prohibition on states entering into a "Treaty, Alliance, or Confederation" is absolute, while the prohibition on states entering into an "Agreement or Compact," even with a foreign government, is limited only by the political decision of Congress to consent.[184]

The question of what constitutes a "Treaty, Alliance, or Confederation" versus an "Agreement or Compact" can in theory open the door to major constitutional issues of separation of powers and federalism.[185] In the case of the Great Lakes, there is a sensible answer.

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178. *Id.* § 8.7, 122 Stat. at 3763.

179. *See* Douglas L. Grant, *Interstate Water Allocation Compacts: When the Virtue of Permanence Becomes the Vice of Inflexibility*, 74 U. COLO. L. REV. 105, 108–09 (2003).

180. *See* Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, § 8.5, 122 Stat. at 3763.

181. Great Lakes Agreement, *supra* note 156.

182. U.S. CONST. art. I, § 10, cl. 3.

183. *Id.* art. I, § 10, cl. 1.

184. Despite the plain language of the Compact Clause, congressional consent may not be necessary for interstate compacts relating to matters in which the United States has no possible interest or concern, or that do not increase the states' political power. *See* Virginia v. Tennessee, 148 U.S. 503, 519–21 (1893).

185. It is left to Congress to determine whether a proposed arrangement is a prohibited "Treaty, Alliance, or Confederation" or a permissible "Agreement or Compact." *See* Frankfurter & Landis, *supra* note 143, 694–95. This determination may elude a rigid legal analysis

Congress has already exercised its treaty powers in this area through the Boundary Waters Treaty of 1909, and it could view any attempt by the states to enter into a binding management arrangement with the provinces on a related subject as an impermissible treaty.[186] Further, even if Congress viewed such an arrangement with the provinces as a compact rather than a treaty, it would likely reject either the entire compact or the inclusion of the provinces. This lesson has already been learned in the Great Lakes; as described above, when the Great Lakes states proposed including the provinces in the original Great Lakes Compact over fifty years ago, Congress rejected the provincial participation and only approved the compact among the states.[187]

While Congress would not likely allow a binding agreement between the states and provinces, in its 2000 amendments to the Water Resources Development Act it stated a desire for the states to work "in consultation with" the provinces to develop a Great Lakes water management agreement.[188] The states were wise to interpret this congressional encouragement not as permission to negotiate a compact with the provinces, but rather to develop a nonbinding cooperative approach to Great Lakes water management that involves the provinces.

The Great Lakes Compact incorporates the provinces through the Great Lakes Agreement's "Regional Body," comprised of representatives from each state and province.[189] The primary mechanism for achieving this purpose is the "Regional Review" procedure conducted by the Regional Body. The Regional Body's authority could be fairly described as procedural rather than substantive, and its determinations described as advisory rather than final. The Regional Body's role includes notice, consultation, and public participation, but stops short of final decision making.[190] The parties and Compact Council need only "consider" (but not follow) Regional Review findings.[191] The Regional Review process is also limited to "regionally significant

since it is "in a field in which political judgment is, to say the least, one of the important factors." *Id.* at 695 n.37.

186. Congress has already refused to authorize the Great Lakes states from entering into any arrangement with Canadian jurisdictions that could be viewed as a treaty or limitation of the United States' treaty-making powers when it approved the original Great Lakes Basin Compact. *See* Great Lakes Basin Compact, Pub. L. No. 90-419, §§ 2–3, 82 Stat. 414, 419 (1968).

187. *See id.*

188. Water Resources Development Act of 2000, Pub. L. No. 106-541, § 504, 114 Stat. 2572, 2644–45 (codified as amended at 42 U.S.C. § 1962d–20(b) (2006)).

189. *See* Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact, Pub. L. No. 110-342, § 1.2, 122 Stat. 3739, 3741 (2008) (defining "Regional Body").

190. *See id.* § 4.5, 122 Stat. at 3749–51.

191. *See id.* § 4.5(5)(i), 122 Stat. at 3751.

or potentially precedent setting" proposals (as determined by a majority of the members of the Regional Body) and the exceptions to the prohibition on diversions discussed above.[192]

The Regional Review process avoids infringing on federal treaty powers, but still gives the provinces an evaluative and procedural role that may prove useful for affecting major decisions. The Regional Review process could have influences similar to that of the environmental review process required by the National Environmental Policy Act (NEPA).[193] Like Regional Review, NEPA's environmental review can be considered procedural. Yet over time, it may have both subtle and direct effects on agency decision making.

C. Interstate Nuisance

The federalist system of governance and the exercise of state authority often results in legal conflicts between states. State sovereignty, at least in an absolute sense, must yield to the political and legal realities of having neighbors and sharing resources. In the context of Great Lakes governance, one state's exercise of its sovereignty to develop its water resources will unavoidably interfere with a neighboring state's exercise of its sovereignty to protect its territory. While interstate compacts, as discussed above, can avoid some of these conflicts, litigation is inevitable.

The Supreme Court has original jurisdiction over disputes between states pursuant to Article III of the Constitution.[194] As detailed below, the Court invoked this jurisdiction to resolve a regional dispute over Chicago's use and diversion of Great Lakes water in *Wisconsin v. Illinois*.[195] While the Court has exercised its jurisdiction to adjudicate interstate nuisance pollution claims over the past century,[196] in recent decades the Court has become reluctant to exercise its jurisdiction over these technical and time consuming disputes.[197] When faced with

192. *See id.* § 4.5(1)(c), (f), 122 Stat. at 3749–50. A state may, at its discretion and after consulting with the proposal applicant, seek Regional Review for any other proposal within its jurisdiction. *Id.* § 4.5(2)(c)(ii), 122 Stat. at 3750.

193. National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. §§ 4321–47 (2006)) (requiring review of potential environmental impacts from major federal actions).

194. U.S. CONST. art. III, § 2, cl. 2 ("In all Cases affecting Ambassadors, other public Ministers and Consuls, and those in which a State shall be Party, the supreme Court shall have original Jurisdiction.").

195. Wisconsin v. Illinois (*Wisconsin I*), 278 U.S. 367 (1929).

196. *See, e.g.*, Georgia v. Tenn. Copper Co., 237 U.S. 474 (1915); Georgia v. Tenn. Copper Co., 206 U.S. 230 (1907).

197. *See, e.g.*, Illinois v. City of Milwaukee, 406 U.S. 91 (1972); Ohio v. Wyandotte Chems. Corp., 401 U.S. 493 (1971).

such disputes, the Court's decisions have focused on the preemption of federal common law by federal regulatory statutes[198] and the applicability of state common law to interstate transboundary pollution.[199]

As discussed above, Congress has significant powers and jurisdiction pursuant to the Commerce Clause to regulate and manage water resources. However, in the absence of congressional statutory law, the Supreme Court has developed a federal common law of interstate nuisance and equitable apportionment to resolve pollution and water use disputes between the states.[200] As a result, federal common law effectively limits state sovereignty (and protects state territorial integrity) in the context of interstate litigation.[201] The Supreme Court's application of its interstate nuisance and equitable apportionment doctrines is thus a key part of the Great Lakes governance picture.

The Supreme Court's adjudication of the Chicago diversion litigation in a long series of *Wisconsin v. Illinois* cases[202] shaped the legal rules for state use of shared Great Lakes waters and continues to play a substantive role in Great Lakes governance. The story of the Chicago diversion and resulting litigation has been told before,[203] but a brief recap is important for understanding Great Lakes law and governance today.

By the late nineteenth century, Chicago was quickly growing into one of the nation's largest cities. But the city on the shores of Lake Michigan had a water problem—Chicago was disposing of its sewage into Lake Michigan (via the Chicago River), while taking its drinking water from the same source. As a result, the population suffered from outbreaks of chronic waterborne illnesses.[204] But the city's engineers rose to the challenge, building a canal to reverse the flow of the Chi-

198. *See, e.g.*, City of Milwaukee v. Illinois, 451 U.S. 304 (1981).

199. *See, e.g.*, Int'l Paper Co. v. Ouellette, 479 U.S. 481 (1987).

200. *See* Noah D. Hall, *Political Externalities, Federalism, and a Proposal for an Interstate Environmental Impact Assessment Policy*, 32 HARV. ENVTL. L. REV. 49, 61–70 (2008).

201. For analyses of the Supreme Court's transboundary pollution caselaw, see generally Thomas W. Merrill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931 (1997); Robert V. Percival, *The Clean Water Act and the Demise of the Federal Common Law of Interstate Nuisance*, 55 ALA. L. REV. 717 (2004). For similarly excellent analyses of the Supreme Court's interstate waters equitable apportionment caselaw, see generally Robert Haskell Abrams, *Interstate Water Allocation: A Contemporary Primer for Eastern States*, 25 U. ARK. LITTLE ROCK L. REV. 155 (2002); A. Dan Tarlock, *The Law of Equitable Apportionment Revisited, Updated, and Restated*, 56 U. COLO. L. REV. 381 (1985).

202. Wisconsin v. Illinois (*Wisconsin VI*), 449 U.S. 48 (1980); Wisconsin v. Illinois (*Wisconsin V*), 388 U.S. 426 (1967) (per curiam); Wisconsin v. Illinois (*Wisconsin IV*), 289 U.S. 395 (1933); Wisconsin v. Illinois (*Wisconsin III*), 281 U.S. 696 (1930); Wisconsin v. Illinois (*Wisconsin II*), 281 U.S. 179 (1930); *Wisconsin I*, 278 U.S. 367 (1929).

203. *See* Hall, *supra* note 6, at 419–22; *see also* Percival, *supra* note 201, at 718–32.

204. *See* Hall, *supra* note 6, at 419–20.

cago River, changing its output from Lake Michigan to the Illinois River, and ultimately to the Mississippi River and Gulf of Mexico. At the time, the Chicago River diversion was viewed as a tremendous engineering accomplishment, linking the two major waterways of the Midwest—the Great Lakes and Mississippi River systems. In retrospect, Professor Dan Tarlock's description of the Chicago River diversion as "an epic environmentally unsound public works project,"[205] has proved more accurate by the year, as the unanticipated environmental problems from connecting two naturally separate aquatic ecosystems mount (especially the introduction and spread of invasive species).

While the invasion of nonnative species through the artificial connection is a pressing environmental concern today, the first complaint about the Chicago River diversion came from the states downstream on the Mississippi River that began to receive Chicago's sewage waste. Missouri brought an interstate nuisance action in the Supreme Court, challenging Illinois's discharge of sewage into the Mississippi River system.[206] The case gave the Supreme Court its first opportunity to consider the role of the federal courts in resolving interstate environmental disputes and governing interstate natural resources.

The Court began by recognizing the partial relinquishment by the individual states of their sovereign powers as necessary to the establishment of a united and federalist nation. Yet this relinquishment of sovereignty meant that the Supreme Court must necessarily furnish a forum for the resolution of disputes between states.[207] The Articles of Confederation had created an alternative method for resolving interstate disputes,[208] but Article III of the Constitution vested this function in the judiciary.[209] The Court's conclusion is supported by a historic account in the *Federalist Papers*, in which Alexander Hamilton wrote that the Court would hear not only border disputes between the states, but other forms of interstate disputes as well.[210]

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205. Tarlock, *supra* note 201, at 392.

206. *See* Missouri v. Illinois (*Missouri II*), 200 U.S. 496 (1906); *see also* Missouri v. Illinois (*Missouri I*), 180 U.S. 208 (1901) (overruling Illinois's demurrer to Missouri's complaint).

207. *See Missouri I*, 180 U.S. at 241.

208. The ninth article of the Articles of Confederation had provided for a tribunal method of state–state dispute resolution, whereby the offended state would petition Congress to assemble the functional equivalent of an arbitration panel to hear and decide the controversy. *See id.* at 220–21 (quoting ARTICLES OF CONFEDERATION of 1781, art. IX).

209. *See* U.S. CONST. art. III, § 2, cl. 1; *see also* Judiciary Act of 1789, Ch. 20, §13, 1 Stat. 73, 80 (1789).

210. THE FEDERALIST NO. 80, at 404 (Alexander Hamilton) (Buccaneer Books, 1992) ("[T]here are many other sources, besides interfering claims of boundary, from which bickerings and animosities may spring up among the members of the Union. . . . Whatever practices may

While the Court was clear about its constitutional authority to adjudicate interstate environmental disputes, it was equally weary of having its jurisdiction invoked. It thus established several jurisdictional standards that must be met. The first is that "States are in direct antagonism as States."[211] The Court will recognize any harm to the state's traditional sovereign interests, such as the property, health, safety, and welfare of its citizens, as a sufficient basis for suit against another state.[212] Further, the state action requirement can be met by indirect action by a state or direct action by a state's entity or subdivision (e.g., the Chicago Sanitary District).[213] Second, the case must "be of serious magnitude, clearly and fully proved."[214] Finally, the case must be susceptible to judicial resolution.[215]

Despite exercising its jurisdiction to hear the dispute and providing a forum to resolve competing claims of state sovereignty, the Court ultimately declined to offer Missouri any relief. As is typical in common law nuisance claims over environmental pollution, Missouri struggled to establish sufficient technical and scientific proof regarding its allegations. Justice Holmes noted that Missouri's case "depend[ed] upon an inference of the unseen."[216] Proving causation was difficult for Missouri given the long distance (357 miles) from Chicago to St. Louis.[217] Justice Holmes wrote: "The experts differ as to the time and distance within which a stream would purify itself. No case of an epidemic caused by infection at so remote a source is brought forward, and the cases which are produced are controverted."[218] Ultimately, the Court held that Missouri could not adequately prove causation because the scientific evidence presented could not establish Illinois's discharge of sewage into the Chicago River as the sole or primary source of pollution in the Mississippi River.[219]

Missouri's failed challenge was just the beginning of the legal saga. Chicago's population (and sewage output) continued to grow, and the city increased the diversions from Lake Michigan from 2,541 cubic

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have a tendency to disturb the harmony between the states, are proper objects of federal superintendence and control.").

211. *Missouri I*, 180 U.S. at 249 (Fuller, C.J., dissenting).

212. *See id.* at 236–37, 241 (majority opinion).

213. *See id.* at 241.

214. *Missouri II*, 200 U.S. 496, 521 (1906).

215. *Id.*

216. *Id.* at 522.

217. *Id.* at 523.

218. *Id.*

219. *Id.* at 525–26.

feet per second (cfs) in 1900 up to 8,500 cfs by 1924.[220] With more water being drained from Lake Michigan, the states of Wisconsin, Michigan, and New York (later joined by almost every other Great Lakes state) brought suit in the Supreme Court against Illinois. The plaintiff states' complaint alleged that the Chicago diversion lowered levels in Lake Michigan by more than six inches. The states claimed harms to navigation and serious injuries to their citizens and property.[221] Illinois argued in response that: (1) the diversion was necessary for the health of its population; (2) the federal government approved of the diversion; and (3) the diversion did not cause any actual injury.[222]

The Supreme Court appointed former Chief Justice and Secretary of State Charles Evan Hughes to serve as special master to gather evidence and administer the litigation.[223] In his report to the Court, Hughes determined that Chicago's diversion lowered the levels of Lakes Michigan and Huron by six inches and Lakes Erie and Ontario by five inches.[224] As a result of the lowered water levels, there was damage "to navigation and commercial interests, to structures, to the convenience of summer resorts, to fishing and hunting grounds, to public parks and other enterprises, and to riparian property generally."[225] The Court agreed with Hughes's findings regarding the "great losses" to the complainant states.[226] The Court also rejected the federal permit defense, finding that the federal permit was merely a response to the public health threat of the sewage and not a federal decision regarding interstate allocation of the Great Lakes.[227]

Although the Court was sympathetic to the claims of the complainant states, it was also concerned with the public health implications and economic costs of immediately halting the entire Chicago diver-

220. *See Wisconsin I*, 278 U.S. 367, 404, 417 (1929); *see also* Sanitary Dist. of Chi. v. United States, 266 U.S. 405, 413 (1925).

221. *Wisconsin I*, 278 U.S. at 400.

222. *See id.* at 409–11. In separate litigation, Chicago's Sanitary District was found to be in violation of its federal permit to divert 4,167 cfs from Lake Michigan. *See Sanitary Dist. of Chi.*, 266 U.S. at 430–32; *see also* Percival, *supra* note 201, at 729. However, in 1925 the Secretary of War amended the permit, allowing the diversion to increase to 8,500 cfs provided the Chicago Sanitary District began to employ artificial sewage treatment processes. *See Wisconsin I*, 278 U.S. at 417–18; *see also* Percival, *supra* note 201, at 729.

223. *Wisconsin I*, 278 U.S. at 399. Hughes was originally appointed to the Supreme Court in 1910, but left the Court in 1916 for an unsuccessful run for President. From 1921 to 1925, Hughes served as Secretary of State under President Warren G. Harding.

224. *Id.* at 407.

225. *Id.* at 408.

226. *Id.* at 409.

227. *See id.* at 415–18.

sion.[228] The Court gave Hughes the unenviable task of balancing these important competing interests in the context of state sovereignty.[229] Hughes recommended, and the Court adopted, a phased reduction in the Chicago diversion to give the city time to build adequate sewage treatment. By 1939 the allowable diversion was limited to 1,500 cfs (plus domestic pumping).[230] The case has never closed, and the party states have brought subsequent motions to the Supreme Court regarding Illinois's compliance with the diversion reduction schedule and the amount of water allowed for domestic pumping. The bottom line for the Great Lakes is that after nearly a century of litigation, the Chicago River diversion is now capped at 3,200 cfs.[231]

Legal scholars may note that the Court's reasoning and decision regarding the Chicago River Great Lakes diversion differs subtly but importantly from its decisions regarding interstate disputes over western rivers. The Court did not rely on its equitable apportionment doctrine from prior cases, which simply divided and allocated transboundary rivers between two or more states.[232] Instead of divvying up the Great Lakes (or at least some portion of the available water supply) between the competing states, Chief Justice William Howard Taft's decisions sought to define the bounds of the states' shared reasonable use duties.[233] Perhaps the former President from Ohio—whose administration had negotiated the Boundary Waters Treaty of 1909 between the United States and Canada[234]—appreciated the governance challenge inherent in a resource shared among two countries and eight states and the need to respect the many competing values and uses of the Great Lakes.[235] While some water diversions from the Great Lakes may be necessary, the Court understood the ultimate importance in preserving the integrity of the Great Lakes system.

D. Discrimination Against Interstate Commerce

The Commerce Clause creates a different hurdle to state water policy. The states' broad regulatory powers over their waters are limited by the Dormant Commerce Clause—the federal government's author-

228. *See id.* at 420–21.

229. *See Wisconsin I*, 278 U.S. at 421.

230. *Wisconsin II*, 281 U.S. 179, 198, 201 (1930); *see also Wisconsin III*, 281 U.S. 696, 697 (1930).

231. *See Wisconsin IV*, 289 U.S. 395 (1933); *Wisconsin V*, 388 U.S. 426, 427 (1967); *Wisconsin VI*, 449 U.S. 48 (1980).

232. *See* Wyoming v. Colorado, 259 U.S. 419 (1922); Kansas v. Colorado, 206 U.S. 46 (1907).

233. *See* Hall, *supra* note 6, at 422.

234. *See supra* Part I.

235. *Id.*

ity to void state laws that impermissibly burden interstate commerce.[236] The Supreme Court's Commerce Clause analysis consists of two stages. First, facial discrimination by states against interstate commerce is per se invalid and those laws must therefore fail.[237] Second, if the state law is not facially discriminatory, but still in some way impacts interstate commerce, the permissibility of the law will turn on the application of the reasonableness factors first described in *Pike v. Bruce Church, Inc*. Statutes that affect interstate commerce but "even-handedly . . . effectuate a legitimate local public interest" will be upheld unless the burden imposed by those statutes is "clearly excessive in relation to the putative local benefits."[238] If there is in fact a legitimate local purpose, the permissibility of the state law will turn on the "nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities."[239] This analysis usually entails a balancing approach applied by the court.[240]

The Commerce Clause limitations thus present a powerful obstacle to state water management of the Great Lakes. The doctrine could limit the ability of a state to control or restrict the export of its water. In *Sporhase v. Nebraska ex rel. Douglas*, the Supreme Court first held that groundwater was an article of interstate commerce.[241] The Court then held that a Nebraska statute restricting the export of groundwater from Nebraska to states that grant a reciprocal right to import water to Nebraska was unconstitutional.[242] Although *Sporhase* involved a dispute about a state groundwater statute, the holding from the case most likely applies to surface water as well.[243]

Sporhase is significant in the context of Great Lakes governance because it holds that water is an article of interstate commerce and

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236. *See generally* Sporhase v. Nebraska *ex rel.* Douglas, 458 U.S. 941 (1982); Chris Seldin, Comment, *Interstate Marketing of Indian Water Rights: The Impacts of the Commerce Clause*, 87 CALIF. L. REV. 1545, 1553 (1999).

237. Robin Kundis Craig, *Constitutional Contours for the Design and Implementation of Multistate Renewable Energy Programs and Projects*, 81 U. COLO. L. REV. 771, 792 (2010); *see also* Brannon P. Denning, *Extraterritoriality and the Dormant Commerce Clause: A Doctrinal Post-Mortem*, 73 LA. L. REV. 979, 996 (2013).

238. Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

239. *Id.*

240. *Id.*

241. *Sporhase*, 458 U.S. 941.

242. *See id.* at 953, 957–58.

243. Margaret Z. Ferguson, Comment, *Instream Appropriations and the Dormant Commerce Clause: Conserving Water for the Future*, 75 GEO. L.J. 1701, 1723 (1987) ("Because the demise of the legal fiction of state ownership, the interstate dimension of water, and the Court's consistent rejection of state resource isolation apply with the same force to surface water as to groundwater, it is apparent that if faced with a case raising the issue, the Court will likely hold that surface water is an article of commerce subject to the dormant commerce clause.").

state laws that seek to regulate the transfer of water must conform to the limitations of the Commerce Clause doctrine. However, despite this certainty of federal power to affect Great Lakes governance and water management, *Sporhase* also stands for the proposition that state regulation of interstate water transfers may nonetheless be permissible if they are sufficiently reasonable and survive the *Pike* test.

A final note about the Dormant Commerce Clause is that it is merely a default rule. As discussed above in the context of the Clean Water Act, Congress often creates roles for states within federal regulatory regimes, and the resulting state action may permissibly burden interstate commerce. Congress may also allow states to enact laws that impact interstate commerce, often through approval of an interstate compact as occurred with the Great Lakes Compact. With the enactment of the Great Lakes Compact, Congress has allowed the states to restrict the diversion and export of Great Lakes water out of the Basin (and to other states), with the supremacy of federal law.

IV. TRIBAL GOVERNANCE

Tribal governance and the sovereignty of tribal nations play a key role in the management of the Great Lakes. The Commerce Clause explicitly recognizes the power of the federal government to regulate commerce with "the Indian Tribes,"[244] and the inclusion of "Indian Tribes" with "foreign Nations" and "States" seems to recognize the tribes' sovereignty.[245] While the Treaty Clause does not explicitly reference tribes, the Supreme Court has consistently construed the Clause as authorizing the President to make treaties with tribes.[246] In 1871, Congress passed a statue prohibiting the President from making further treaties with tribes, but the statute protects existing treaty rights.[247] Tribes thus have a unique, independent sovereignty from the

244. U.S. CONST. art. I, § 8, cl. 3.

245. *See* Ann E. Tweedy, *Connecting the Dots Between the Constitution, the Marshall Trilogy, and* United States v. Lara*: Notes Toward a Blueprint for the Next Legislative Restoration of Tribal Sovereignty*, 42 U. MICH. J.L. REFORM 651, 656 (2009). *But see* Robert G. Natelson, *The Original Understanding of the Indian Commerce Clause*, 85 DENV. U. L. REV. 201, 260, 265 (2007).

246. *See, e.g.*, United States v. Forty-Three Gallons of Whiskey, 93 U.S. 188, 197 (1876) (opining that the President's power to enter treaties with tribes is "coextensive with that to make treaties with foreign nations").

247. Act of Mar. 3, 1871, ch. 120, § 1, 16 Stat. 544, 566 (codified at 25 U.S.C. § 71 (2006)) ("No Indian nation or tribe within the territory of the United States shall be acknowledged or recognized as an independent nation, tribe, or power with whom the United States may contract by treaty; but no obligation of any treaty lawfully made and ratified with any such Indian nation or tribe prior to March 3, 1871, shall be hereby invalidated or impaired."). Justice Thomas has described 25 U.S.C. § 71 as "constitutionally suspect," but nonetheless acknowledges that it "re-

federal government and from the states.[248] Consequently, tribes have retained powers of self-government—an independence which gives the Great Lakes tribes some specific authority over the Great Lakes.[249]

That is not to say that tribal jurisdiction over the Great Lakes is unfettered; U.S. policy toward tribal nations has only recently developed to the point where tribes are actually given authority rather than being actively undermined by the U.S. government. In the nineteenth century, federal Indian policy was fixated on removing tribes to reservations west of the Mississippi River.[250] In the first part of the twentieth century, the federal government's policy shifted from removal to the imposition of model laws and codes enforced by tribal police and tribal courts, which were frequently antagonistic toward the people they governed.[251]

It was not until the late twentieth century that federal policy toward tribal nations began to emphasize autonomy and self-sufficiency.[252] President Reagan enunciated this policy in 1983, stating that the appropriate relationship with tribal governments was one that was "government to government."[253] The EPA also announced its own Indian policy in the 1980s.[254] Under this policy the EPA stated its desire to work with Indian tribes on a government-to-government basis, recognized tribal governments as primary parties for setting standards and managing reservation environmental programs, and declared that it intended to assist tribes in assuming management responsibility for reservation lands.[255] The EPA also declared its willingness to deal

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flects the view of the political branches that the tribes had become purely a domestic matter." United States v. Lara, 541 U.S. 193, 218 (2004) (Thomas, J., concurring).

248. Matthew L.M. Fletcher, *Resisting Federal Courts on Tribal Jurisdiction*, 81 U. COLO. L. REV. 973, 974 (2010).

249. *See generally* Jacqueline Phelan Hand, *Protecting the World's Largest Body of Fresh Water: The Often Overlooked Role of Indian Tribes' Co-Management of the Great Lakes*, 47 NAT. RESOURCES J. 815 (2007).

250. *Id.* at 817.

251. *See* Fletcher, *supra* note 248, at 984.

252. *See* Exec. Order No. 13,175, 65 Fed. Reg. 67,249 (Nov. 9, 2000) (stating that "[t]he United States recognizes the right of Indian tribes to self-government and supports tribal sovereignty and self-determination"); *see also* Hand, *supra* note 249, at 817–18.

253. Hand, *supra* note 249, at 817–18.

254. *Id.* at 818.

255. *Id.* (citing WILLIAM D RUCKELSHAUS, EPA POLICY FOR THE ADMINISTRATION OF ENVIRONMENTAL PROGRAMS ON INDIAN RESERVATIONS 2, 4 (1984), *available at* http://www.epa.gov/tribalportal/pdf/indian-policy-84.pdf).

with tribes as states if those tribes met certain statutory and regulatory criteria specified in the statutes administered by the EPA.[256]

United States policy toward tribal nations has greatly changed over time and developed into a regime that affords Indian tribes an opportunity to meaningfully impact management of the Great Lakes. Although their role in governance was actively diminished for centuries by the federal government and its agents, tribal nations have risen to greater prominence in the last few decades in the context of Great Lakes governance. This change in policy, coupled with tribes' traditional hunting, fishing, land, and water use rights, has opened the door for a number of tribal Great Lakes governance bodies.[257]

Two examples of tribal Great Lakes governance bodies are the Chippewa Ottawa Resource Authority and the Great Lakes Indian Fish and Wildlife Commission. The Chippewa Ottawa Resource Authority (CORA) consists of six Michigan tribes and its purpose, as enunciated in the organization's charter, is to "ensur[e] the conservation and wise utilization of the natural resources reserved to the Tribes in the Treaty of March 28, 1836."[258] CORA operates a fishery management program and studies water quality issues, such as invasive species.[259] CORA also possesses enforcement authority; it enforces its own regulations and those of other federal agencies and may try violators within its members' tribal courts.[260]

In addition to the above scientific and enforcement responsibilities, CORA also consults with experts in such agencies as the U.S. Fish and Wildlife Service, the Forest Service, and the Michigan Department of Natural Resources in order to fulfill its mandate as a tribal Great Lakes governance body.[261] Importantly, CORA also consults with tribal hunters and fishers in fulfilling its mandate.[262]

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256. *Id.* at 819; *see also* Indian Reorganization Act, 25 U.S.C. §§ 461–79 (2006); 33 U.S.C. § 1377(e) (2006) (authorizing the Environmental Protection Agency to treat tribes as states under the Clean Water Act).

257. *See* Fletcher, *supra* note 248, 978–79 ("Indian nations are immune from suit in federal, state, and tribal courts, as well as immune from state taxation and regulation inside of Indian country. Indian nations retain important treaty rights to hunt, fish, and gather, as well as land and water rights. Indian nations have the authority to establish separate and independent governments, to define their own citizenship requirements, to regulate the activities of their own citizens, and even to punish the crimes of their own citizens and the citizens of other Indian nations. Indian nations even have some authority to tax and regulate the activities of non-Indians on Indian lands." (footnotes omitted)).

258. *Charter*, CHIPPEWA OTTAWA RESOURCE AUTHORITY, art. 1, http://1836cora.org/documents/CoraCharter.pdf (last visited Feb. 12, 2014) [hereinafter *CORA Charter*].

259. Hand, *supra* note 249, at 822.

260. *Id.*

261. *CORA Charter*, *supra* note 258, art. 4.

262. *Id.*

The Great Lakes Indian Fish and Wildlife Commission was formed in 1984 as a result of a Seventh Circuit case which reaffirmed the treaty rights of tribal nations in Wisconsin.[263] The Commission's mission is to coordinate between Ojibwa groups to jointly manage water and fishery resources.[264] Consequently, the Commission has promulgated regulations that it enforces through its game wardens.[265]

V. Property Rights and Limitations

The common law riparian reasonable use doctrine provides the foundation for private water use rights in all eight of the Great Lakes states (typical of states east of the Mississippi River).[266] Under riparian law, an owner of land abutting a waterbody is a riparian and has certain rights to the waterbody, including the right to make reasonable use of the water, to wharf out, and to use the entire surface of the waterbody for navigation.[267] These riparian rights are correlative in nature; they are subject to the equal rights of other riparians on the same waterbody. Thus, any given waterbody functions as a common resource for the riparians who own property bordering it.[268] Further, the riparians do not own the water itself; instead, they possess a right to use the water for certain purposes (a usufructuary right). Rather than an absolute right, it is a correlative right held subject to the usufructuary rights of other riparians.[269] Michigan courts, typical of riparian Great Lakes states, explain the application of the riparian reasonable use doctrine as follows:

> Under the reasonable use doctrine, "a riparian owner may make any and all reasonable uses of the water, as long [as] they do not unreasonably interfere with the other riparian owners' opportunity for reasonable use." "Whether and to what extent a given use shall be allowed under the reasonable use doctrine depends upon the weighing of factors on the would-be user's side and balancing them against similar factors on the side of other riparian owners. No list of factors is exhaustive, because the court will consider all the circumstances that are relevant in a given case." While in theory no single factor is conclusive, "[d]omestic uses are so favored that they will generally prevail over other uses." Furthermore, while the rea-

263. Hand, *supra* note 249, at 821.

264. *Id.*

265. *Id.*

266. Western states have largely adopted the prior appropriation doctrine, which severs water use rights from the land and prioritizes water use on a first-come, first served basis. *See* Robert W. Adler, Robin K. Craig & Noah D. Hall, Modern Water Law: Private Property, Public Rights, and Environmental Protections 87–89 (2013).

267. *Id.* at 23–76.

268. *Id.* at 23.

269. *See* Red River Roller Mills v. Wright, 15 N.W. 167, 168 (Minn. 1883).

> sonable use doctrine generally allows water to be transported and used on nonriparian lands, such uses may be disfavored over uses on riparian land.[270]

The *Restatement (Second) of Torts* reflects the common law of the Great Lakes states with regard to reasonable use determinations.[271] In balancing competing riparian rights, courts should look to the following factors:

> (a) The purpose of the use,
> (b) the suitability of the use to the watercourse or lake,
> (c) the economic value of the use,
> (d) the social value of the use,
> (e) the extent and amount of the harm it causes,
> (f) the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other,
> (g) the practicality of adjusting the quantity of water used by each proprietor,
> (h) the protection of existing values of water uses, land, investments and enterprises, and
> (i) the justice of requiring the user causing harm to bear the loss.[272]

Thus, private water rights in the Great Lakes states are correlative with respect to other riparians and subject to external conditions and a court's application of social and economic values. While water use rights benefit from the same constitutional protections that apply to other forms of private property susceptible to governmental takings (as discussed in the following subpart), private water rights are also subject to the federal navigation servitude and the public trust doctrine. These doctrines, discussed below, limit property rights by giving the government the authority (and sometimes duty) to enforce public rights at the expense of private property.

A. Protection from Takings

The Constitution grants the government power but also limits the power of government with respect to individual rights; most notable for environmental law is the limitation on the taking of private property without due process and compensation. The Fifth and Fourteenth Amendments to the Constitution prohibit the taking of private prop-

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270. Mich. Citizens for Water Conservation v. Nestle Waters N. Am. Inc., 709 N.W.2d 174, 194–95 (Mich. Ct. App. 2005) (alterations in original) (citations omitted) (quoting STOEBUCK & WHITMAN, THE LAW OF PROPERTY § 7.4, at 422–25 (3d ed., 2000)), *aff'd in part, rev'd in part*, 737 N.W.2d 447 (Mich. 2007).

271. *See id.* at 203 n.46.

272. RESTATEMENT (SECOND) OF TORTS § 850A (1979). While the *Restatement* factors are provided for riparian law regarding surface waters, the same general correlative rights described above and balancing of *Restatement* factors applies to groundwater. *See Mich. Citizens for Water Conservation*, 709 N.W.2d at 204–06.

erty for public use without compensation by the federal and state or local governments.

The Fifth Amendment states that "[n]o person shall be . . . deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation."[273] Similarly, the Fourteenth Amendment states that "[n]o State shall . . . deprive any person of life, liberty, or property, without due process of law."[274]

While the Fourteenth Amendment lacks the text regarding the taking of property, the Supreme Court has held that the Fifth Amendment's takings prohibition applies to state and local governments through the Due Process Clause.[275] The Fifth and Fourteenth Amendments only prohibit governments from taking private property without just compensation and without due process of law. Federal and state governments can still involuntarily take private property through eminent domain (providing due process and just compensation) as long as the taking serves a "public use"—a term broadly interpreted by the Supreme Court.[276]

The Supreme Court recognizes three categories of takings subject to the Fifth and Fourteenth Amendments. First, the government can take private property by physically occupying the property or forcing the private landowner to endure some physical invasion by the government or by the general public. This is a classic condemnation using eminent domain powers. The Supreme Court considers any physical taking as compensable, even when just a portion of a person's property has been occupied.[277] Even the temporary flooding of private property by the federal government may be compensable as a physical taking, although the ultimate success of such a takings claim would

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273. U.S. CONST. amend. V.

274. *Id.* amend. XIV, § 1.

275. *See* Dolan v. City of Tigard, 512 U.S. 374, 383–84 (1994); *see also* Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 481 n.10 (1987).

276. *See* Kelo v. City of New London, 545 U.S. 469, 480 (2005) ("[W]hen this Court began applying the Fifth Amendment to the States at the close of the 19th century, it embraced the broader and more natural interpretation of public use as 'public purpose.'").

277. *See, e.g.*, Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 322 (2002) ("When the government physically takes possession of an interest in property for some public purpose, it has a categorical duty to compensate the former owner, regardless of whether the interest that is taken constitutes an entire parcel or merely a part thereof." (citations omitted)); *cf.* Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 435 (1982) ("The historical rule that a permanent physical occupation of another's property is a taking has more than tradition to commend it. Such an appropriation is perhaps the most serious form of invasion of an owner's property interests.").

require a detailed inquiry into the nature of the property right under relevant state law.[278]

Second, since 1922, the Supreme Court has recognized takings claims for losses of private property rights due to federal and state regulations that limit use of the property. In *Pennsylvania Coal Co. v. Mahon*, Justice Oliver Wendell Holmes wrote for the Court, "while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking."[279] The protection against regulations that go "too far" led to the Supreme Court's three-part balancing test established in *Penn Central Transportation Co. v. New York City*.[280] Under the *Penn Central* test, courts examine: (1) "[t]he economic impact of the regulation on the claimant," (2) "the extent to which the regulation has interfered with distinct investment-backed expectations," and (3) "the character of the governmental action."[281] Given the factors of the balancing test, private persons have an uphill battle to get compensation for regulations affecting private property under the *Penn Central* analysis, but the doctrine nonetheless deters government regulation and action.

Finally, since 1992, the Supreme Court has recognized a narrowly defined categorical regulatory taking when government action deprives the landowner of all economic use of the land. In *Lucas v. South Carolina Coastal Council*, the Supreme Court held that these categorical regulatory takings automatically require compensation to the private property owner.[282] However, the regulation must produce a complete wipeout of "all" economic use of the property; if the landowner retains some use of the property (no matter how small), the

278. *See* Ark. Game & Fish Comm'n v. United States, 133 S. Ct. 511 (2012). The Court's unanimous decision in *Arkansas Game & Fish Commission* allows a landowner to proceed with a takings claim for compensation from temporary flooding caused by the federal government's operation of a dam. However, allowing a landowner's takings claim for temporary flooding to proceed as a matter of federal takings law is not the end of the case. The more difficult and fundamental issue is whether, as a matter of state property law, ownership of riparian land in Arkansas comes with some expectation of temporary flooding. Justice Ginsburg wrote: "The determination whether a taking has occurred includes consideration of the property owner's distinct investment-backed expectations, a matter often informed by the law in force in the State in which the property is located." *Id.* at 522 (citing Brief for Professors of Law Teaching in the Property Law and Water Rights Fields as Amici Curiae Supporting Respondent, *Ark. Game & Fish Comm'n*, 133 S. Ct. 511 (No. 11-597)). *See generally* David Baake, Case Comment, Arkansas Game and Fish Commission v. United States, 37 HARV. ENVTL. L. REV. 577 (2013).

279. Pa. Coal Co. v. Mahon, 260 U.S. 393, 415 (1922).

280. Penn Cent. Trans. Co. v. New York City, 438 U.S. 104 (1978).

281. *Id.* at 124.

282. Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1017–19, 1029, 1031–32 (1992).

Supreme Court uses the *Penn Central* balancing test instead of the *Lucas* categorical rule.[283]

Applying the Supreme Court's takings jurisprudence to water use rights can be challenging. Water rights, even when physically taken by the government, are much more difficult to value than tangible property that you can view on a surveyor's map or hold in your hand. This is because water itself is constantly moving and the right to that water is the right to its use, not its ownership.[284] Nevertheless, the constitutional protections against takings apply to private usufructuary water rights and the government may not seize or diminish the value of these rights without paying the owner compensation, just as it would be forced to do if the taking involved tangible property.[285] As described above, the nature of riparian rights makes it difficult for private parties to prevail in a takings claim. In cases when courts do find that the government has taken a water right, it is usually the case that the entire right was destroyed; it is exceedingly uncommon for a plaintiff to win a takings case when the government has merely interfered with the water right.[286]

B. Federal Navigation Servitude

The federal government also has a unique doctrinal defense to takings claims involving interference with riparian rights. The "federal navigation servitude" limits riparian rights and allows the federal government to further its navigation interests at the expense of private property without paying compensation.[287] The federal navigation servitude comes from the federal government's "dominant public interest in navigation."[288] As discussed above, the federal government has Commerce Clause regulatory authority over navigation and navigability. But the navigation servitude effectively insulates the federal government from otherwise legitimate takings claims where federal

283. Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 324 n.19 (2002) (noting that *Lucas* created "a narrow exception to the rules governing regulatory takings for the 'extraordinary circumstance' of a permanent deprivation of all beneficial use," and that, as a result, *Lucas* categorical takings are "relatively rare" (quoting *Lucas*, 505 U.S. at 1017–18)); *see also* Robin Kundis Craig, *supra* note 237, at 797–98.

284. Melissa Kwaterski Scanlan, *Protecting the Public Trust and Human Rights in the Great Lakes*, 2006 MICH. ST. L. REV. 1333, 1336–37; *see also* Kathryn M. Casey, Comment, *Water in the West: Vested Water Rights Merit Protection Under the Takings Clause*, 6 CHAP. L. REV. 305, 307 (2003).

285. Casey, *supra* note 284, at 307.

286. Robin Kundis Craig, *Defining Riparian Rights as "Property" Through Takings Litigation: Is There a Property Right to Environmental Quality?*, 42 ENVTL. L. 115, 125 (2012).

287. Gibson v. United States, 166 U.S. 269, 276 (1897).

288. United States v. Willow River Power Co., 324 U.S. 499, 507 (1945).

projects or operation of federal regulatory authority in navigable waters impair private property rights in those waters.[289] Thus, it is best understood as a "navigation servitude" or "navigation easement" that encumbers private riparian rights.[290] Similarly, both the states and federal government can in some cases use the public trust doctrine (discussed below) to justify regulation and avoid compensation pursuant to takings jurisprudence.

C. Public Trust Doctrine

The concept of the public trust is ancient and dates back to the time of Justinian and the Roman Empire, but its American application stems from more recent English common law roots.[291] The Northwest Ordinance of 1787 established the public trust doctrine in the Great Lakes and connecting waters.[292] It provided that

> [t]he navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways, and forever free, as well to the inhabitants of the said territory as to the citizens of the United States, and those of any other States that may be admitted into the confederacy, without any tax, impost, or duty therefor.[293]

The public trust is essentially a recognition that navigable waters are extremely important to society and that these waters should, in some respects, be held open to the public for certain uses.[294] Private ownership is nonetheless protected and individual land owners are permitted to transfer legal title to the lands under navigable waters, but the state is to retain and protect the public's interest in public trust lands.[295]

The powers and limitations of states with respect to their Great Lakes public trust resources were first addressed by the Supreme

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289. *See* United States v. Twin City Power Co., 350 U.S. 222, 224–25 (1956).

290. *See* United States v. Grand River Dam Auth., 363 U.S. 229, 231 (1960); *see also* United States v. Chandler-Dunbar Water Power Co., 229 U.S. 53, 61–63 (1913) (describing private title to the beds of navigable waters as a "technical title," which is "qualified" and "subordinate to the public rights of navigation, and however helpful in protecting the owner against the right of third parties, is of no avail against the exercise of the great and absolute power of Congress over the improvement of navigable rivers").

291. *See* Bertram C. Frey & Andrew Mutz, *The Public Trust in Surface Waterways and Submerged Lands of the Great Lakes States*, 40 U. MICH. J.L. REFORM 907, 918–20 (2007). *See generally* Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

292. Frey & Mutz, *supra* note 291, at 921.

293. Northwest Ordinance of 1787 art. IV, *reprinted in* 1 U.S.C., at LV, LIX (2006).

294. Kenneth K. Kilbert, *The Public Trust Doctrine and the Great Lakes Shores*, 58 CLEV. ST. L. REV. 1, 2 (2010); *see also* Scanlan, *supra* note 284, at 1336.

295. *See* Kilbert, *supra* note 294, at 4.

Court in the seminal case *Illinois Central Railroad v. Illinois*.[296] The case arose out of a conflict over control of the lakebed of Lake Michigan near downtown Chicago.[297] Through the Lake Front Act of 1869, the State of Illinois had granted to the Illinois Central Railroad a large portion of the lakebed under the Chicago Harbor.[298] Today, almost all commentators on this subject see this grant of submerged lands as a blatant attempt by powerful corporate interests to seize land and wealth at the expense of the public.[299] Eventually, the Illinois state legislature saw fit to revoke this grant of public land to a rich, private company—an action that ultimately catalyzed the litigation.[300] The railroad challenged the revocation as a violation of its contracts and constitutional rights under the Fourteenth Amendment Due Process Clause.[301] The case wended its ways through the judicial system until it reached the Supreme Court in 1892.

The Supreme Court ultimately held that submerged and coastal lands held in the public trust by the state could be alienated, but the state has a limited ability to divest this submerged public trust property.[302] The Court ruled that when Illinois conveyed ownership of the submerged land to the railroad in 1869, it violated its duty to maintain the public trust, as the conveyance lacked sufficient public purpose and decision making.[303]

Thus, after *Illinois Central Railroad*, states are limited in their ability to alienate public trust land for private purposes related to navigation and commerce. Divestments of portions of the public trust to private purposes must not interfere with the traditional public interests of navigation, commerce, and fishing.[304] Due to the immensity of public trust land in the Great Lakes, this case was a crucial clarification on the scope of states' public trust responsibilities.

Although the federal and English characterizations of navigability were important for the initial concept of the public trust in the new Northwest Territory states, those states were ultimately able to craft their own approaches to navigability and the public trust. Once the

296. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387 (1892).

297. *See id.* at 390; *see also* Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in* Illinois Central, 71 U. CHI. L. REV. 799, 800 (2004).

298. *See* James L. Huffman, *Speaking of Inconvenient Truths—A History of the Public Trust Doctrine*, 18 DUKE ENVTL. L. & POL'Y F. 1, 54–55 (2007).

299. Kearney & Merrill, *supra* note 297, at 805.

300. *See* Huffman, *supra* note 298, at 54–55.

301. *See id.* at 55.

302. *See Ill. Cent. R.R. Co.*, 146 U.S. at 435.

303. *See id.* at 455–56.

304. *See id.*; *see also* Huffman, *supra* note 298, at 57.

new Northwest and Great Lakes states acquired sovereignty over their territory upon being admitted to the Union, they were able to craft more robust state versions of the public trust that encompassed the Great Lakes.[305] Consequently, the Great Lakes states today all have varying and, in many cases, expansive public trust and navigability doctrines that continue to define and protect the public's interest in the waters of the Great Lakes.

This multiplicity of Great Lakes public trust doctrines is important, if only because of the vast amount of shoreline that the doctrine governs. Throughout the United States, approximately 200,000 square miles are affected by some form of public trust—and a third of that is made up of Great Lakes state shorelines.[306] However, it is important to note that the Great Lakes do not contain a singular, monolithic version of the doctrine. Each state differs: some states have codified the doctrine and others have left it to the common law.[307]

For example, in many Great Lakes states, navigability is defined by "floatability"—in other words, a waterway is considered navigable for purposes of the public trust doctrine if there is enough water to float a boat, barge, or log down it.[308] Michigan, Wisconsin, and Minnesota all employ this test in some fashion for determining the extent of the public trust.[309] The Supreme Court of Indiana has stated that navigability depends on whether the waterway was susceptible to navigation at the time Indiana was admitted to the Union.[310] Similarly evidencing the disparity between public trusts in Great Lakes states, Minnesota classifies navigability based on whether the surface water is owned publicly or privately, whereas Illinois holds all meandered lakes in the public trust, regardless of location, size, or shape.[311] Because the public trust doctrine has its origins in navigability, the states have generally rejected attempts to expand the doctrine to cover groundwater.[312]

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305. Frey & Mutz, *supra* note 291, at 923.

306. *Id.*

307. *See id.* at 924.

308. *See id.* at 926.

309. *Id.*

310. *Id.* at 930 (citing State *ex rel.* Ind. Dep't of Conservation v. Kivett, 95 N.E.2d 145 (Ind. 1950)).

311. Frey & Mutz, *supra* note 291, at 926, 934.

312. *See* Noah D. Hall, *Protecting Freshwater Resources in the Era of Global Water Markets: Lessons Learned from Bottled Water*, 13 U. DENV. WATER L. REV. 1, 46–50 (2009).

VI. Conclusion

Great Lakes law and governance is not static, nor should it be. New problems emerge, information improves, and values evolve over time. However, the fundamental structure for governing the Great Lakes is likely to remain constant. Given the international and interstate nature of the Great Lakes, the federal government has a supreme role in governance based on its powers to enter treaties with foreign governments and regulate commerce between states. While the federal government has the constitutional authority to take an even more dominant role in Great Lakes governance, it has historically governed in partnership with the states. And the federal government's power is far from absolute. State sovereignty, interstate governance, and Indian tribes continue to shape Great Lakes law and policy, while private property rights steer local water use decisions. Rather than searching for a "governance solution" for the Great Lakes, we should utilize and embrace all available powers and authorities as issues and problems warrant.