

SUBMERGED LANDSCAPES: THE PUBLIC TRUST IN URBAN ENVIRONMENTAL DESIGN, FROM CHICAGO TO KARACHI AND BACK AGAIN

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ABSTRACT

The public trust doctrine asserts a largely inalienable public interest in submerged lands and related rights of water access and use. It purportedly dates back to Roman water law, from which it diffused through both civil and common law traditions in Europe and the U.S. In a landmark case, the U.S. Supreme Court affirmed the Illinois legislature’s revocation of land and water rights granted to the Illinois Central Railroad on the lakefront of Chicago in the 1860s. Illinois Central Rail Road Company v. Illinois established a basis for waterfront protection that helped shape the “public trust doctrine.” Subsequent case law influenced lakefront environmental design, as recently as the 2003 expansion of the Chicago Bears football stadium. Although Illinois Central has been cited extensively in the U.S. and internationally, for better or worse it has not had the impact that many envisioned.

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This paper begins with a conceptual framework for analyzing precedents in public law and environmental design. It uses this framework to re-examine the antecedents and legacy of Illinois Central in Chicago and beyond. The paper reaches beyond the boundaries of the United States to ask how the Illinois Central precedent has been advanced in other areas of the world, with a focus on South Asia. The final part of the paper asks how the early twenty-first century might once again be a time when places like Chicago look internationally for precedents that creatively address the struggle for enhanced public land and water use and design.

I. PROBLEM STATEMENT

The story as I want to tell it begins on the Chicago lakefront with a Supreme Court case brought by the Illinois Central Railroad Company against the State of Illinois more than a century ago.¹ Litigation began after the Illinois legislature revoked a large grant of submerged land along Lake Michigan to create a southern rail entry into the city and a breakwater along its shore, terminating in the city's downtown harbor near the mouth of the Chicago River.² *Illinois Central Rail Road Company v. Illinois* became pivotal for what late-twentieth century scholars of environmental law have called the public trust doctrine.³ It was linked with ancient sources in Roman law, transmitted through a fascinating series of civil and common law antecedents, and has been cited in a host of related land, water, and environmental law cases and reviews in the United States and beyond, to the present day.

Although some legal scholars dispute this genealogy, the basic story is reprinted in most major legal casebooks on water and environmental law.⁴

1. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387, 433–34 (1892) (“The object of the suit is to obtain a judicial determination of the title of certain lands on the east or lake front of the city of Chicago, situated between the Chicago River and Sixteenth Street, which have been reclaimed from the waters of the lake, and are occupied by the tracks, depots, warehouses, piers, and other structures used by the railroad company in its business, and also of the title claimed by the company to the submerged lands, constituting the bed of the lake, lying east of its tracks, within the corporate limits of the city, for the distance of a mile, and between the south line of the south pier near Chicago river, extended eastwardly, and a line extended in the same direction from the south line of lot 21 near the company's roundhouse and machine shops. The determination of the title of the company will involve a consideration of its right to construct, for its own business, as well as for public convenience, wharves, piers, and docks in the harbor.”).

2. *Id.* at 405 n.1.

3. *Id.* at 460.

4. See generally A. DAN TARLOCK ET AL., WATER RESOURCE MANAGEMENT: A CASEBOOK IN LAW AND PUBLIC POLICY 404–14 (Foundation Press 5th ed. 2002) (discussing *Illinois Central* and the public trust doctrine as a limit on private use).

Recently, it has come under renewed historical criticism.⁵ Whether the *Illinois Central* decision of 1892 was what subsequent jurists have made of it, or not, it has shaped important land use and urban design decisions along the Chicago lakefront. Daniel Burnham's 1909 *Plan of Chicago* called for a continuous band of public parks built on landfills in front of the previously private, riparian properties.⁶ One of these parks, Promontory Point (designed by Alfred Caldwell, a protégé of the early native plant advocate Jens Jensen) became the site of a now decadal conflict over the design of coastal erosion protection works, in which then-Senator and nearby resident Barack Obama was asked to intervene.⁷ Millennium Park in downtown Chicago, inaugurated in 2004, successfully navigated lakefront protection policies with innovative environmental design.⁸

Completion of the Lake Michigan lakefront park system has been a priority for Chicago Mayor Richard M. Daley, the Chicago Park District, and for those celebrating the Burnham Centennial in 2009.⁹ Daley ordered the midnight destruction of the Meigs Field Airport runways on the lakefront, citing post-9/11 security concerns to accomplish his long-term aims for an ecological lakefront park.¹⁰ These are just a few examples in Chicago where lakefront parcels have been transformed by public land use law, landfill, and landscape design to extend public access, use, and benefits.

The story has many exceptions: some lakefront steel plants in south Chicago and Indiana have received legislative grants of lakefront and lakebed parcels;¹¹ the Lake Shore Drive highway sliced through the park

5. See James L. Huffman, *Speaking of Inconvenient Truths—A History of the Public Trust Doctrine*, 18 DUKE ENVTL. L. & POL'Y F. 1, 8 (2007) (arguing that there is a widespread misrepresentation of the history of the public trust doctrine); 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, 802–03 (2004) (arguing that the public trust case was shaped by local political and legal struggles).

6. DANIEL H. BURNHAM & EDWARD H. BENNETT, *PLAN OF CHICAGO* 50–51 (Charles Moore ed., Princeton Architectural Press 1993) (1908).

7. See SaveThePoint.Info, <http://savethepointchicago.org> (last visited Apr. 27, 2009) (“This unique park is threatened by the current plans of the Chicago Park District to encase it in a concrete and steel seawall, as well as by encroachment from portions of the South Lake Shore Drive reconstruction project.”).

8. TIMOTHY J. GILFOYLE, *MILLENNIUM PARK: CREATING A CHICAGO LANDMARK* 319 (2006).

9. See The Burnham Plan Centennial, About the Centennial, <http://burnhamplan100.uchicago.edu> (last visited Apr. 27, 2009) (“The vision for the Plan’s 100th anniversary is to inspire our region’s communities, leaders and institutions to build on the success of the Burnham Plan and act boldly together to shape our future.”).

10. Gary Washburn & Hal Dardick, *Daley Boasts About Closing Meigs; New Group Says Mayor is a Liar*, CHI. TRIB., Mar. 31, 2004, Metro, Zone C, at 1.

11. See *Droste v. Kerner*, 217 N.E.2d 73, 75 (Ill. 1966) (discussing the Illinois legislature’s sale of 194.6 acres of submerged lands to U.S. Steel for \$19,460), *overruled by* *Paepcke v. Public Bldg. Comm’n*, 263 N.E.2d 11 (Ill. 1970).

from north to south;¹² Northwestern University extended its lakefront with landfill barged from the Indiana dunes,¹³ while Loyola University's later proposal for a lakefront extension was struck down;¹⁴ and private riparian landownership along Chicago's northern lakefront persists despite numerous design competitions and proposals for extending the park.

The distinction between "public" and "private" was explicitly formulated, and debated, in Roman law, if not before.¹⁵ The *Illinois Central* case is just one chapter in an age-old, still salient concern about the relationships between individual and collective interests in water and related land resources. Today, debates tend to revolve around the privatization of water supplies and utilities, commodification of bottled water, splintering of urban infrastructure, source water protection, public access to water bodies, boundaries of the "navigable waters" of the United States, and so on.¹⁶

These issues are countered by critics of public ownership who cite the failure of far too many public water agencies to provide efficient, equitable, and safe water and sanitation services—especially to the poorest members of society and the most fragile ecological habitats.¹⁷ Public trust is thus at stake on both sides, and I purposely title this paper "public trust" rather than "public trust doctrine" to address both concerns: encroachment on the public realm and erosion of public trust in government.

These chapters of the story have received extensive attention in water and environmental law and policy literatures. While they deserve still further attention, this article seeks to address several less well-covered dimensions of the public trust doctrine: first, its landscape contexts and consequences; second, the increasing international application of public trust cases outside the United States with a focus on South Asia; and third,

12. See *Lehmann v. Revell*, 188 N.E. 531, 532 (Ill. 1933) (discussing an 1895 act by the Illinois legislature, known as the Submerged Lands Act, which enabled park commissioners to enlarge parks bordering upon public waters and granted submerged lands for this purpose, allowing for an outer boulevard to run upon filled land in Lake Michigan).

13. Paul H. Douglas, *Statement of U.S. Senator Paul H. Douglas Regarding Indiana Dunes, 1962*, in THE ELECTRONIC ENCYCLOPEDIA OF CHICAGO (2005), available at <http://www.encyclopedia.chicagohistory.org/pages/10977.html>.

14. *Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs*, 742 F. Supp. 441, 447 (N.D. Ill. 1990).

15. See 1 GAIUS, *Book II: Law of Things* § 10, in INSTITUTES OF GAIUS 65, 67 (Francis De Zulueta trans., Oxford Univ. Press 1946) ("Things subject to human right are either public or private.").

16. See PETER H. GLEICK ET AL., THE WORLD'S WATER 2008–2009: THE BIENNIAL REPORT ON FRESHWATER RESOURCES (2009) (discussing the political, economic, scientific, and technological issues associated with the world's freshwater resources).

17. See THE WORLD BANK, WATER RESOURCES SECTOR STRATEGY: STRATEGIC DIRECTIONS FOR WORLD BANK ENGAGEMENT 19 (2004), available at <http://www.worldbank.org/reference> (follow "Documents and Reports" hyperlink; then enter "Water Resource Sector Strategy" into search field) ("[W]hile some public utilities have managed to maintain high performance over protracted periods, few poorly performing public utilities have bootstrapped themselves to achieve sustained good performance.").

questions about the readiness of the United States to receive what might be called “return flows” from these international precedents. These three topics strive to connect public law and landscape innovations on an international scale. Because there are many obstacles to this goal, including reasonable criticisms of public trust doctrine literature, the paper strives to reweave them within an historical narrative of the public trust case law and interpretation.

Part one outlines a conceptual approach to these issues of water law and landscape design. The following parts present historical sketches of the evolution of public water law in the United States and South Asia. The first sketch retraces the historical geography of ideas about public waters, beginning, as is common, with *The Digest of Justinian*.¹⁸ A second sketch shows how these Roman antecedents took several pathways to the United States, including English common law which most public trust doctrine histories recount, but also through French water administration, Spanish water law, and British colonial laws—all of which shaped nineteenth century laws and landscapes in different regions of the United States. One instance of these legal histories occurred in the late-nineteenth century lakefront controversy in Illinois, which constitutes the third historical sketch of the paper.

One often wants to know when reading a legal decision, what happened afterwards?¹⁹ How did the case actually affect land and people? To what extent did environmental designers fulfill, test, or creatively interpret the case? It is difficult to answer these questions in the Roman context where only a *Digest*, not the original cases, survive.

Far more landscape evidence is available for what happened after the *Illinois Central* case. Recounting the subsequent cases and projects along the Chicago lakefront sheds light on the relationships between public law and landscape change.

Interestingly, these legal and landscape precedents have had significance for waterfront design far beyond Chicago. A brief Shepardizing exercise describes their diffusion in the United States. I show how the Illinois precedent has, and has not, affected public-private water struggles in other U.S. states. To jump ahead, although many courts have cited *Illinois Central* in public trust doctrine cases,²⁰ the precedent has had

18. 1 JUSTINIAN, THE DIGEST OF JUSTINIAN 43.6–43.15 (Theodor Mommsen & Paul Krueger eds., Alan Watson trans., Univ. of Pennsylvania Press 1985). The Digest of Justinian is a four-volume compilation of classic Roman Law translated into English with online corrections at <http://iuscivile.com/materials/digest> (accessed Apr. 8, 2009).

19. David Takacs, Student Essay Competition Winner, *The Public Trust Doctrine: Environmental Human Rights and the Future of Private Property*, 16 N.Y.U. ENVTL. L.J. 711 (2008).

20. LexisNexis.com, LexisNexis Shepard search of *Illinois Central v. Illinois*, 146 U.S. 387 (1892) (starting by shepardizing the case and then restricting the search under the “FOCUS” hyperlink

less of an impact in U.S. federal cases in recent years than it has had outside of the United States.²¹

The paper then turns to how *Illinois Central* and the public trust doctrine have extended to South Asia, initially India and Sri Lanka and most recently to Karachi, Pakistan. In the South Asian context, where Public Interest Litigation (PIL) is a major force, environmental design has increasingly close links with PIL case law.

The final part of the story seeks to return from South Asia to the United States. I argue for a revival of internationalism in U.S. environmental planning, policy, law, and design—for a rigorous search for international precedents. The hypothesis is that these foreign law-and-design alternatives can help “expand the range of choice” in the United States in the early twenty-first century.²²

II. CONCEPTUAL FRAMEWORK

Previous research examines long-term transfers of water law and policy among different landscapes of the United States, Europe, and South Asia.²³ It employs conceptual approaches ranging from the history of ideas (e.g., hydraulic civilizations) to the diffusion of innovation, social learning, and mapping models, depending upon the research question and evidence. One study of “transferring lessons from around the world to the western United States” draws upon Roman legal historian Alan Watson’s theory of legal

to cases containing the terms “public trust doctrine,” resulting in 627 citing decisions) (last conducted Mar. 19, 2009).

21. The most recent U.S. Supreme Court citation to *Illinois Central* was over a decade ago in *Idaho v. Coeur d'Alene Tribe*, 521 U.S. 261, 285 (1996). See more recent cases in South Asia discussed in Part VII.

22. James L. Wescoat Jr., *The ‘Practical Range of Choice’ in Water Resource Geography*, *PROGRESS IN HUMAN GEOGRAPHY* 41–59 (1987).

23. See generally James L. Wescoat Jr., *The ‘Right of Thirst’ for Animals in Islamic Water Law: A Comparative Approach*, 13 *ENV’T & PLANNING D: SOC’Y & SPACE* 637, 637 (1995) (discussing Islamic water law in the context of the Islamic Republic of Pakistan and the western United States); James L. Wescoat Jr., *Water Policy and Cultural Exchange: Transferring Lessons from Around the World to the Western United States*, in *IN SEARCH OF SUSTAINABLE WATER MANAGEMENT* 1–24 (Douglas S. Kenney ed., 2005) (discussing the impact of technology on transnational environmental design ideas); James L. Wescoat Jr., *Wittfogel East and West: Changing Perspectives on Water Development in South Asia and the United States, 1670–2000*, in *CULTURAL ENCOUNTERS WITH THE ENVIRONMENT* 109 (Alexander B. Murphy & Douglas L. Johnson eds., 2000) (analyzing Wittfogel’s “hydraulic hypothesis” from “the historical, cultural, and practical perspective” of South Asia and North America); James L. Wescoat Jr., *The Landscape of Roman Water Law*, in *ENVIRONMENTAL DESIGN* 88–99 (2001) [hereinafter Wescoat, *The Landscape of Roman Water Law*] (special issue on Multi-Cultural Mediterranean Landscapes).

transplants, which has special relevance for studying Roman sources of public water law.²⁴

Briefly, Watson presents three main theoretical perspectives on the sources and transmission of Roman law: 1) law as a mirror; 2) law as autonomous; and 3) legal transplants from one place and time to another.²⁵ In propositions about “law as a mirror,” laws reflect something else, e.g., their environmental or social context.²⁶ This view faces several pitfalls, the most important of which is environmental determinism of the sort exemplified by Montesquieu’s *Spirit of the Laws* (e.g., arguments that laws in cold climates are rigid, efficient, or barbaric; while those of tropical climates are weak, ambiguous, or despotic).²⁷ These associations caricature environmental influences on laws, which deserve reassessment in light of recent human-environment research.

The second position, according to Watson, takes the opposite approach, in which laws are regarded as largely autonomous.²⁸ The strong version of this approach occurs in revealed religious law and theories of natural law that are deemed universal and self-evident. A broader version asserts that, however laws originate, they are transmitted as largely autonomous texts that apply across a wide range of contexts.²⁹ In this textual approach, law develops in self-referential ways. Over time it produces a body of precedents that apply to an ever-widening range of environmental situations, without becoming overly particularistic, but with the risk of not being sensitive or well-adapted to new situations either. This position bears comparison with theories of autonomy in architectural design.³⁰

There is a third approach that Watson calls “legal transplants.”³¹ Transplants are consciously derived from one context, or landscape, and

24. See generally Alan Watson, *From Legal Transplants to Legal Formants*, 43 AM. J. COMP. L. 469, 471–72 (1995) (discussing three examples of the importance of legal culture); see also Alan Watson, *Aspects of Reception of Law*, 44 AM. J. COMP. L. 335, 346–50 (1996) (discussing the borrowing of Roman law by other countries in establishing law on the use of rivers); Wescoat, *The Landscape of Roman Water Law*, *supra* note 23.

25. Watson, *From Legal Transplants to Legal Formants*, *supra* note 24.

26. *Id.* at 470–71.

27. CLARENCE J. GLACKEN, *TRACES ON THE RHODIAN SHORE: NATURE AND CULTURE IN WESTERN THOUGHT FROM ANCIENT TIMES TO THE END OF THE EIGHTEENTH CENTURY* 568, 570, 574–75 (1967); CHARLES DE SECONDAT MONTESQUIEU, *THE SPIRIT OF LAWS* 231–45 (Anne M. Cohler et al. eds., Cambridge Univ. Press 1989) (1748).

28. Watson, *From Legal Transplants to Legal Formants*, *supra* note 24.

29. *Id.* at 474–75.

30. See generally Stanford Anderson, *Quasi-autonomy in Architecture: The Search for an ‘In-between,’* 33 PERSPECTA 30, 30–37 (2002) (examining architecture as in-between the extremes of autonomous discipline and cultural product, and finding quasi-autonomy); PIER VITTORIO AURELI, *THE PROJECT OF AUTONOMY: POLITICS AND ARCHITECTURE WITHIN AND AGAINST CAPITALISM* 18–21 (2008) (discussing the development of intellectual autonomy through processes of political and social communalization).

31. Watson, *From Legal Transplants to Legal Formants*, *supra* note 24, at 469.

transmitted or adapted for application in others. In Roman law, Watson argues, elite legal institutions (law schools, jurists, etc.) played a key role in importing, exporting, and adapting these legal transplants from one place and situation to another.³² This position also invites comparison with design, as elite firms and schools search globally for precedents that creatively address a local project, place, and people. The work of elite institutions is not autonomous, however, for it is driven by forces of international political economic, environmental, and cultural change.³³ To avoid the mirror fallacy, however, we must maintain that it is shaped, but not determined by, those forces.³⁴ In addition to these driving forces, there are what Susan Clarke calls “steering resources,”³⁵ and what Kenneth Boulding calls the “integrative power”³⁶ of social action and landscape design.³⁷ While Watson’s writings address the reception of legal transplants, they do not encompass the range of transformations that occur in the use of legal and design precedents.³⁸

The importance of design is amplified when one considers writings by Roman legal historians such as Henry Sumner Maine. Maine argued that law is inherently conservative, lagging behind societal changes that must repeatedly challenge legal precedents before they are replaced by new precedents.³⁹

What about design—does it lead or lag social change? I leave that empirical question for another study, and suggest that in cases where legal historians are correct about law lagging behind social and environmental change, design can and should try to help bridge those gaps. Environmental design can serve this role, though it can also promote regressive or digressive precedents in the face of critical social and environmental problems. It seems important to understand how legal and landscape precedents engage one another.

32. *Id.* at 469, 471–72.

33. See James L. Wescoat, Jr., *Three Faces of Power in Landscape Change*, in *POLITICAL ECONOMIES OF LANDSCAPE CHANGE: PLACES OF INTEGRATIVE POWER* 14–16 (James L. Wescoat, Jr. & Douglas M. Johnston eds., 2008) (discussing the political economies of design).

34. *Id.* at 10–11 (discussing the fallacy of considering driving forces as one directional rather than reciprocal).

35. Susan E. Clarke, *Constructing the Politics of Landscape Change*, in *POLITICAL ECONOMIES OF LANDSCAPE CHANGE: PLACES OF INTEGRATIVE POWER* 91, 92–93, 98–100 (James L. Wescoat, Jr. & Douglas M. Johnston eds., 2008).

36. KENNETH E. BOULDING, *THREE FACES OF POWER* 46–47 (1989).

37. Clarke, *supra* note 35, at 91; see also RANDOLPH T. HESTER, *DESIGN FOR ECOLOGICAL DEMOCRACY* 1–4 (2006) (using the term “ecological democracy” to describe government by the people emphasizing direct, hands-on involvement in remaking American cities).

38. See Alan Watson, *Aspects of Reception of Law*, *supra* note 24, at 335 (discussing legal transplants that illustrate the role of borrowing as a source for legal change).

39. HENRY SUMNER MAINE, *ANCIENT LAW: ITS CONNECTION WITH THE EARLY HISTORY OF SOCIETY AND ITS RELATION TO MODERN IDEAS* 20 (Dorset Press 1986) (1861).

Legal transplant theory has special relevance for Roman water law, which has been evoked, adapted, and applied around the world.⁴⁰ In figurative terms, a transplant “takes” or is “rejected.” These metaphors do not do justice, however, to the complex processes of legal adaptation and reception. The transplant metaphor is less apt for landscape design, which almost always envisions substantial adaptation of precedents. The common term for both fields, however, is “precedent”—with meanings that range from a binding rule to a formal model, a useful analogy, an inspired metaphor, or a discovered outcome of inquiry.⁴¹ These meanings can be arranged along a gradient from super-precedents to metaphors (see Figure 1).

40. See Watson, *Aspects of Reception of Law*, *supra* note 24.

41. See 12 OXFORD ENGLISH DICTIONARY 310 (2d ed. 1989) (providing five major definitions and variants for “precedence”).

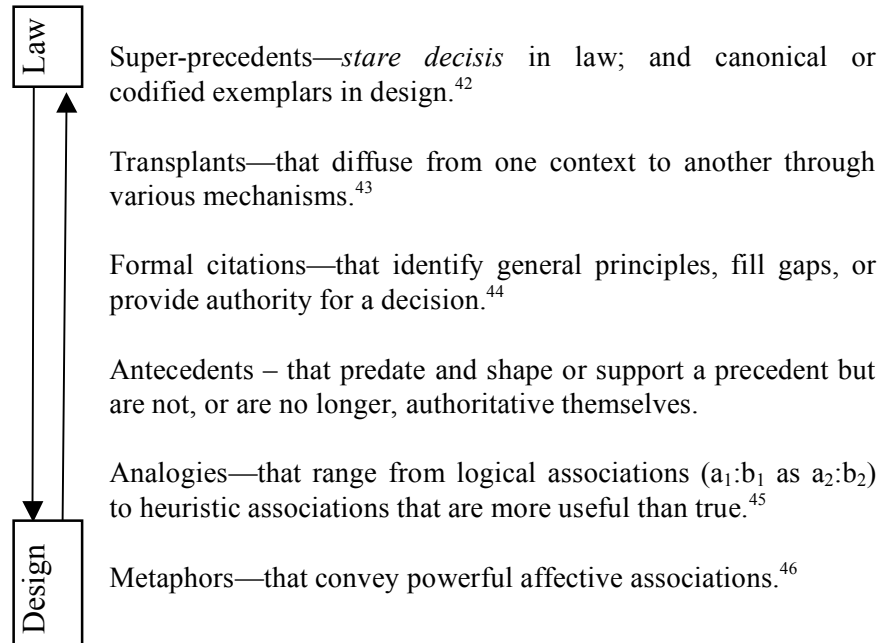


Figure 1: Typology of “Precedents” in Law and Design.

There is a vast amount literature associated with each of these concepts.⁴⁷ Here we simply organize them along a gradient to facilitate discussion of different types and aspects of precedents. While it might be thought that law privileges binding precedents while design places greater

42. See generally William M. Landes & Richard A. Posner, *Legal Precedent: A Theoretical and Empirical Analysis*, 19 J.L. & ECON. 249, 250–52 (1976) (discussing the effect of legal precedent).

43. Watson, *From Legal Transplants to Legal Formants*, *supra* note 24, at 469.

44. See, e.g., Hans W. Baade, *Roman Law in the Water, Mineral, and Public Land Law of the Southwestern United States*, 40 AM. J. COMP. L. 865, 869–70 (1992) (discussing the evolutionary relationship between the *derecho patrio* (Spanish) law and Roman law); AMOS RAPOPORT, *HISTORY AND PRECEDENT IN ENVIRONMENTAL DESIGN* 31, 53 (1990) (noting that precedent becomes stronger and more convincing if more general reasons based on theory support it).

45. Hans W. Baade, *The Casus Omissus: A Pre-History of Statutory Authority*, 20 SYRACUSE J. INT’L L. & COM. 45, 46 (1994) (noting that reasoning by statutory analogy cannot be justified by actual legislative intent); MICHAEL H. GLANTZ, *SOCIETAL RESPONSES TO REGIONAL CLIMATIC CHANGE: FORECASTING BY ANALOGY* 1, 2–5 (Michael H. Glantz ed., 1988); AHMED HASAN, *ANALOGICAL REASONING IN ISLAMIC JURISPRUDENCE: A STUDY OF THE PRINCIPLE OF QIYAS* (1992); see also MARY B. HESSE, *MODELS AND ANALOGIES IN SCIENCE* 57–101 (1966) (describing material analogies and the validity of arguments from analogies).

46. SABINE MAASEN, *METAPHOR AND ANALOGY IN THE SCIENCES: MAKING USE AND MAKING SENSE OF THEM* 199–232 (Fernand Hallyn ed., 2000).

47. HESSE, *supra* note 45.

weight on informal analogy and metaphor,⁴⁸ there is considerable common ground between these poles. Subsequent sections of the paper show how some transplants involved strong precedents, while others served more as antecedents than precedents, *per se*, and still others as useful analogies or inspiring metaphors.

This expansive view of legal and landscape precedents associated with the public trust doctrine invites criticism. Professor James Huffman presents an extensive critique of public trust doctrine precedents, from Roman antecedents to *Illinois Central*, and later efforts to extend it to other domains.⁴⁹ The conceptual framework outlined above seeks to anticipate and address some of these criticisms in the sections that follow.

III. ROMAN ANTECEDENTS

Notwithstanding its many controversies, modern accounts of the public trust doctrine cite *Illinois Central*, along with a fascinating chain of legal associations and antecedents from ancient Rome to Chicago via Europe and the New Jersey oyster beds, of all places.⁵⁰ The metaphorical richness of these accounts is part of their power.

The story generally begins with *The Digest of Justinian*, compiled at the great law school in Beirut at the order of the emperor Justinian in the 530s C.E.⁵¹ If you studied law during the late Roman era through that of early modern Europe you would begin with the *Digest* and textbooks such as the *Institutes* of Justinian and Gaius,⁵² which distinguished various classes of things and associated rights—*res nullius*, things owned by no one; *res communes*, things open to all; *res publicae*, things held by the state on behalf of citizens; *res privatae*, things owned by persons; *res sacrae*, sacred things; and so on. The denotations and connotations of these categories, as well as the boundaries and overlaps among them, have been subjects of perennial debate.⁵³

48. Landes & Posner, *supra* note 42, at 249, 250–52; Watson, *From Legal Transplants to Legal Formants*, *supra* note 24.

49. See Huffman, *supra* note 5 (arguing that courts and academic scholars should look beyond Roman, English, and early American history for justifications of the public trust doctrine and criticizing these accounts as myth rather than history).

50. See Figure 3 (showing the transfer of legal tradition around the world); see also *Arnold v. Mundy*, 6 N.J.L. 1, 8 (N.J. 1821) (dealing with access to oyster beds).

51. See generally JUSTINIAN, *supra* note 18 (touching on concepts of public waters); see also David S. Rudstein, *A Brief History of the Fifth Amendment Guarantee Against Double Jeopardy*, 14 WM & MARY BILL RTS. J. 193, 199 (2005) (outlining the history of the *Digest of Justinian*).

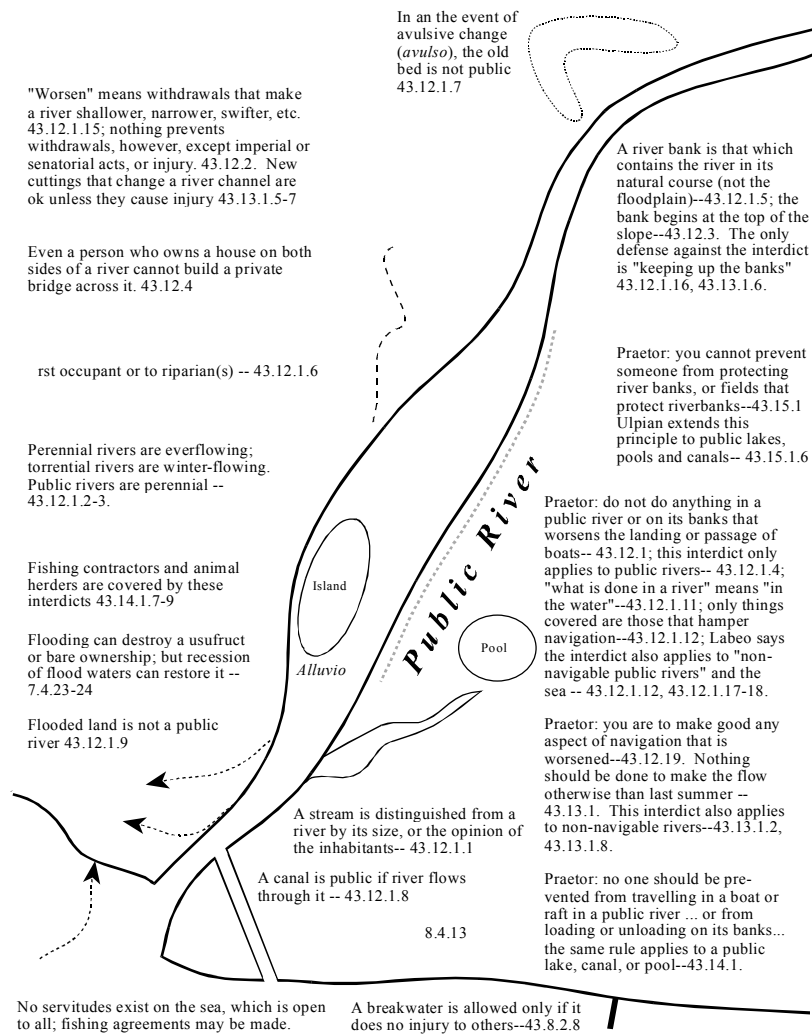
52. GAIUS, INSTITUTE OF GAIUS (W.M. Goron & O.F. Robinson trans., 1988); JUSTINIAN'S INSTITUTES (Peter Birks & Grant McLeod trans., 1987).

53. James L. Wescoat Jr., *Toward a Modern Map of Roman Water Law: The Place of Use Reconsidered*, 18 URB. GEOGRAPHY 100 (1997).

Justinian's codification sought to compile general principles of law distilled from the contexts in which they arose. Three main sections in *The Digest of Justinian* deal with water issues: 1) public waters, 2) rural servitudes, and 3) urban servitudes.⁵⁴ Figure 2 diagrams the passages that deal with public waters. This diagram is a conceptual map of praetor's interdicts and jurists' opinions. Praetor's interdicts forbade actions that interfered with public and private rights or worsened river conditions.⁵⁵ While they have a common formula and provide little detail, the *Digest* contains some geographic clues and diverse opinions.

54. JUSTINIAN, *supra* note 18, at 43.12.1.

55. ANDREW BORKOWSKI & PAUL DU PLESSIS, TEXTBOOK ON ROMAN LAW 161 (3d ed. 2005); JUSTINIAN, *supra* note 18, at 43.12.1.

Figure 2: Public Waters in the *Digest*.⁵⁶

For example, the famous jurist Labeo argued that the islands which arise in a public river are public,⁵⁷ while others argued that such islands are

56. Wescoat, *The Landscape of Roman Water Law*, *supra* note 23, at 95.

new land subject to private occupation and ownership.⁵⁸ Definitions of navigability varied, as did the applicability of laws for navigable rivers to comparable issues on canals, public lakes,⁵⁹ and non-navigable public rivers.⁶⁰ Chapters on private law in the *Digest* record fascinating deliberations about the nature and limits of water ownership relative to neighbors under the headings of urban and rural servitudes.⁶¹

One of the great legal rivalries in ancient Rome has relevance for our topic. It occurred between the conservative jurist Marcus Antistius Labeo, frequently cited in the chapters on private servitudes,⁶² and Ateius Capito, a jurist who served primarily as a public official, including as a *curator aquarum* (curator of the waters) in Rome.⁶³ Capito is not cited often, but he was highly influential in the field of urban water administration and proposals for flood control on the Tiber River.⁶⁴ Labeo was followed by the famous public water manager Frontinus, who wrote *the book* on the aqueducts of Rome.⁶⁵ This contrast between Labeo and Capito is not unlike the situation where private water rights conflicts occur more frequently among individuals in rural areas, while urban water systems are internally managed by public managers and policies. Architects and engineers, along with jurists, have shaped these public and private water systems.⁶⁶

If you were an architecture student in ancient Rome, you would read Vitruvius' Chapter One, Book One, on the education of an architect, which briefly mentions the importance of "knowing the opinion of jurists," along with knowledge of history, music, medicine, philosophy, geometry, and other fields.⁶⁷ Vitruvius included a surprisingly detailed chapter on

57. JUSTINIAN, *supra* note 18, at 41.1.65.4.

58. *Id.* at 43.12.1.6.

59. *Id.* at 43.15.1.6.

60. *Id.* at 43.12.1.12.

61. See, e.g., ALAN RODGER, OWNERS AND NEIGHBORS IN ROMAN LAW 144–47 (1972) (discussing Roman water law as articulated in the *Digest of Justinian*).

62. N. Jors, *Antistius Labeo*, in 1 PAULYS REAL ENCYCLOPÄDIE DER CLASSISCHEN ALTERTUMSWISSENSCHAFT 2548–57 (Germany, Meltzlerscher Verlag ed., 1894).

63. *Id.* at 1902–03.

64. See Nicholas Horsfall, Labeo & Capito, 23 HISTORIA: ZEITSCHRIFT FÜR ALTE GESCHICHTE HISTORIA 252–54 (1972) (discussing the Roman jurist Capito's expertise and rise to the position of counselor in 5 A.D.).

65. CHRISTER BRUUN, THE WATER SUPPLY OF ANCIENT ROME: A STUDY OF ROMAN IMPERIAL ADMINISTRATION 155, 176 (1991); HARRY B. EVANS, WATER DISTRIBUTION IN ANCIENT ROME: THE EVIDENCE OF FRONTINUS 40–42 (1994); see also Katherine Wentworth Rinne, *Aquae Urbis Romae: The Waters of Rome*, <http://www.iath.virginia.edu/waters> (last visited Apr. 27, 2009) (mapping Roman aqueducts).

66. For a discussion of the history and depiction of Rome's water-supply system, as well as information regarding Roman law's influence on water use and maintenance, see CLEMENS HERSCHEL, THE TWO BOOKS ON THE WATER SUPPLY OF THE CITY OF ROME OF SEXTUS JULIUS FRONTINUS (Boston, Dana Estes & Co. 1899).

67. VITRUVIUS, *Book One: First Principles and the Layout of Cities*, in TEN BOOKS ON ARCHITECTURE 21, 22 (Ingrid D. Rowland trans., Cambridge Univ. Press 1999).

“finding water” in Book Eight, which discusses different types of climates, water bodies, soils, and waterworks.⁶⁸ Interestingly, he did not make a distinction between public and private waters, even though in other books he discussed the distinctive aspects of domestic, public, and religious architecture.⁶⁹ Thus, the jurist’s classification of things does not appear to have carried over into the field of architectural education to the extent that one would expect given the detailed rural and urban servitudes that architects would have had to consider.

In his critique of modern public-trust-doctrine references to Roman law, Professor Huffman underscores the dramatically different social context of Roman law, its historical changes over time, and the difficulties of gauging its meaning in its own context, let alone ours.⁷⁰ In making these arguments, he draws upon two major law review articles rather than original sources that would partially support, but also nuance, his arguments.⁷¹ *The Digest* and numerous scholarly commentaries by Roman law historians are available.⁷² These works support some aspects of Huffman’s critique, but not his inferences that Roman jurists’ opinions evoked a “myth of the Golden Age of antiquity,” that “‘things common to all’ were so . . . mostly because supply was abundant and demand slight,” “that ‘things common to all’ are those things free for the taking and conversion to private property . . .,” and so on.⁷³ *The Digest* offers diverse jurists’ perspectives on public interests in navigable waters, banks, canals, and shorelands. It notes various constraints as well as provisions for private

68. VITRUVIUS, *Book Eight: Water*, in *TEN BOOKS ON ARCHITECTURE*, *supra* note 67, 96, 96–106.

69. See VITRUVIUS, *Book Three: Temples*, in *TEN BOOKS ON ARCHITECTURE*, *supra* note 67, at 46, 46–53 (discussing the architectural aspects of temples); VITRUVIUS, *Book Four: Corinthian, Doric, and Tuscan Temples*, in *TEN BOOKS ON ARCHITECTURE*, *supra* note 67, at 54, 54–62 (discussing the architecture aspects of Corinthian, Doric, and Tuscan Temples); VITRUVIUS, *Book Five: Public Buildings*, in *TEN BOOKS ON ARCHITECTURE*, *supra* note 67, at 63, 64–74 (discussing the architecture aspects of public buildings); VITRUVIUS, *Book Six: Private Buildings*, in *TEN BOOKS ON ARCHITECTURE*, *supra* note 67, at 75, 75–84 (discussing the architecture aspects of private buildings).

70. See Huffman, *supra* note 5, at 12–19 (“[O]ur moral judgments influence our understanding and assessment of past laws.”). Cf. RICHARD A. BAUMAN, *LAWYERS AND POLITICS IN THE EARLY ROMAN EMPIRE* (1989) (framing an understanding of Roman law within the historical context of the political relationships between lawyers and the emperors).

71. See Huffman, *supra* note 5 (relying on Patrick Deveny, *Title, Jus Publicum, and the Public Trust: An Historical Analysis*, 1 SEA GRANT L.J. 13, 37 (1976)); see also Glenn J. MacGrady, *The Navigability Concept in the Civil and Common Law: Historical Development, Current Importance, and Some Doctrines that Don’t Hold Water*, 3 FLA. ST. U. L. REV. 511, 519–34 (1975) (evaluating the use of Roman water law).

72. See JUSTINIAN, *supra* note 18, at 43.6–43.17 (discussing public waterways and the Roman view that individuals have both public and private rights to such waterways).

73. Huffman, *supra* note 5, at 16–17.

actions in public waters.⁷⁴ It addresses public and private interests affected by flooding, river channel change, engineering works, and private rights adjoining public waters.⁷⁵ These perspectives bear comparison with legal debates in later periods and places, and serve as antecedents and analogues, if not formal precedents, for public water law.

IV. PATHS OF PUBLIC LAW TRANSMISSION FROM ROME TO THE UNITED STATES

Similar issues arise in accounts of public trust doctrine transmission from Rome to the United States.⁷⁶ The core texts of Justinian were compiled at the great law school at Beirut in the 530s A.D. and rediscovered in medieval European law centuries later.⁷⁷ Four distinct paths in the history of ideas later transplanted Roman antecedents to the United States (see Figure 3).

74. See JUSTINIAN, *supra* note 18, at 43.14.1 (“I forbid the use of force against such a one to prevent him from traveling in a boat or raft in a public river, or loading or unloading on its bank. I will also ensure by interdict that he be allowed to navigate a public lake, canal or pool.”).

75. See *id.* at 43.6–43.17 (discussing public waterways and the Roman view that individuals have both public and private rights to such waterways).

76. See, e.g., Patrick Deveney, *Title, Jus Publicum, and the Public Trust: An Historical Analysis*, 1 SEA GRANT L.J. 13, 16 (1976) (discussing how the realization that coastal area resources are fragile does, and does not, relate to the Roman legal understandings of such resources); L.R. Jaffee, *State Citizen Rights Regarding Great Water Allocation from Rome to New Jersey*, 25 RUTGERS L. REV. 571, 575 (1971) (discussing how the public trust doctrine could apply in New Jersey and create citizen rights in the state’s “tidal and navigable waters, their beds, and their foreshores”); Joseph Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 474 (1970) (finding that the public trust doctrine provides a “comprehensive legal approach” concerned citizens can employ when fighting for the improvement of environmental quality).

77. See generally JUSTINIAN, *supra* note 18, at 43.6–43.17 (compiling classic Roman law).

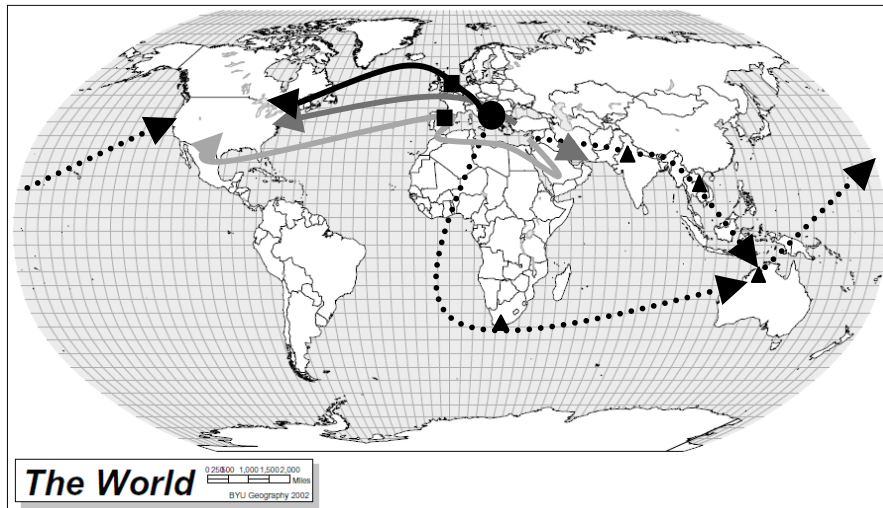


Figure 3: From Rome to the U.S. Legend: English common law (black); French civil law (dark); Spanish water law (light); and British colonial law (dotted).⁷⁸

A. English and American Common Law

The most frequently cited path entails common law transmission beginning with the Magna Carta, which established the British Crown's sovereignty and duties relative to private interests in tidal lands and waters.⁷⁹ Lord Hale's *De Jure Maris* reframed Crown dominion over submerged lands as a responsibility that included public rights of navigation, fishing, docking, and to some extent, basic domestic water uses.⁸⁰ Transfer of Crown sovereignty over submerged lands to the various American states raised many complex issues.⁸¹ Sovereignty in the American context included the "equal footing" doctrine for each new state admitted to the union.⁸² The ways in which each state has invoked that doctrine and managed the competing claims of and grants to private parties

78. Map by author on BYU Geography Department base map.

79. J.C. HOLT, *MAGNA CARTA* app. 6, at §§ 13, 33, 47, 48 (2d ed. 1992).

80. Matthew Hale, *De Jure Maris*, in *A HISTORY OF THE FORESHORE* 370, 372 (Lawbook Exchange, 4th ed. 2006) (1888).

81. Huffman, *supra* note 5, at 27–37.

82. JACK H. ARCHER ET AL., *THE PUBLIC TRUST DOCTRINE AND THE MANAGEMENT OF AMERICA'S COASTS* 9 (1994).

has generated a rich body of public and private water law.⁸³ Occasionally, state cases have had a wider impact. For example, early-nineteenth century cases like *Arnold v. Mundy*⁸⁴ and *Martin v. Waddell*⁸⁵ that involved coastal shellfish beds in the middle-Atlantic states became precedents in later disputes about the role and powers of states over their submerged lands.⁸⁶ Once a precedent was applied and upheld, emphasis shifted from its historical truth to its consequences.⁸⁷ The reasons were not just pragmatic. The conceptual framework in Figure 1 illustrates the important role of heuristic analogies as the basis of precedents that are deemed useful and persuasive, as well as logical analogies that are analytically structured..

B. French Civil Law

During the American Revolution in the 1770s, the United States began to import French expertise in military, civil, cartographic, and hydraulic engineering from leading centers such as the *Ecole Nationale des Ponts et Chausees*.⁸⁸ This expertise helped develop and fortify ports, harbors, and navigable water channels. In fact, a century earlier, explorers Joliet and LaSalle suggested a canal to link the Great Lakes and the Mississippi River system via the Chicago River.⁸⁹ French contributions also included the first river basin (*bassin*) survey in the upper Mississippi drainage in the 1840s, which employed methods that had administrative, as well as scientific importance in France.⁹⁰ These early influences shaped the formation of the U.S. Army Corps of Engineers as the federal entity responsible for navigation, interstate waterways, and later river basin and wetlands regulation under the Commerce Clause of the Constitution.⁹¹

83. *Id.* at 9–10.

84. *See, e.g., Arnold v. Mundy*, 6 N.J.L. 1, 8 (N.J. 1821) (ruling on an action for trespass for the plaintiff's oyster beds).

85. *See, e.g., Martin v. Waddell*, 41 U.S. (1 Pet.) 367, 367 (1842) (ruling on an action for ejectment of the defendant from oyster beds claimed by the defendant).

86. *See* ARCHER ET AL., *supra* note 82, at 10 (discussing judicial precedent on the public trust doctrine); *see also* BONNIE J. MCCAY, OYSTER WARS AND THE PUBLIC TRUST: PROPERTY, LAW, AND ECOLOGY IN NEW JERSEY HISTORY 59 (1998) (“[T]wo of the most important public trust cases in the United States are parts of a casually linked sequence of events. Lawyers and judges are prone to cite either *Arnold v. Mundy* or *Martin v. Waddell* or both . . .”).

87. *Cf. Huffman, supra* note 5, at 9 (arguing that when judges use legal interpretations not supported by precedent, they are implicitly assuming a law and policy-making role).

88. *See* TODD SHALLAT, STRUCTURES IN THE STREAM: WATER, SCIENCE, AND THE RISE OF THE U.S. ARMY CORPS OF ENGINEERS 32–33 (1994) (describing the flow of French engineers to aid the Continental Army during the American Revolution).

89. Charles J. Balesi, *Joliet & LaSalle's Canal Plans*, ELECTRONIC ENCYCLOPEDIA OF CHICAGO (2005), <http://www.encyclopedia.chicagohistory.org/pages/1437.html>.

90. *See generally* MARTHA COLEMAN BRAY, JOSEPH NICOLLET AND HIS MAP (1980) (employing methods that were important scientifically and administratively in France).

91. SHALLAT, *supra* note 88, at 35–42.

C. Spanish Civil Law

Another important strand of civil law was transplanted to the American Southwest via the Spanish conquest, land and water grants, and Mexican laws that included community water management systems known as *acequia* organizations that still operate in New Mexico.⁹² This historical path is fascinatingly complex, as it entails Roman antecedents in Spain,⁹³ Roman influence via the Middle East,⁹⁴ and Islamic water law transmitted across North Africa and Spain (the word *acequia* stems from an Arabic root word, *as-saqiya*, which means water channel).⁹⁵

Part of what makes these Roman, Islamic, and Spanish transplants so interesting is the rigor that geographers, historians, and legal scholars have demonstrated in assessing them. Several examples will suffice. In Spain, geographer Karl Butzer has examined archaeological and historical evidence to discern the relative influences of Roman, Islamic, and indigenous irrigation practices.⁹⁶ He showed how those practices varied in space as well as time, but differed more in degree than in kind.⁹⁷ Historian Thomas Glick retraced irrigation practices in San Antonio to Canary Islanders, and to specific areas on the islands.⁹⁸ He showed how settlers adapted some historical irrigation principles and practices while adopting other irrigation methods in their new environment.⁹⁹ Maass and Anderson quantitatively compared U.S. and Spanish irrigation organizations and institutions.¹⁰⁰ Legal historian Hans Baade has given a detailed account of how Spanish and Mexican land and water law precedents applied in different cases in Texas, and how different bodies of Roman, Castilian, and

92. JOSE A. RIVERA, *ACEQUIA CULTURE: WATER, LAND, AND COMMUNITY IN THE SOUTHWEST*, at xvii–xviii (1998).

93. See Karl W. Butzer, *The Islamic Traditions of Agroecology: Crosscultural Experience, Ideas and Innovations*, 1 *ECUMENE* 7, 29–30 (1994) (discussing how Roman contributions in soil science have influenced Islamic agronomy).

94. See generally PATRICIA CRONE, *ROMAN, PROVINCIAL, AND ISLAMIC LAW: THE ORIGINS OF THE ISLAMIC PATRONATE* (1987) (discussing the influence of Roman law on Islamic law).

95. DANTE AUGUSTO CAPONERA, 1 *WATER LAWS IN MOSLEM COUNTRIES* 32 (1973). In South Asia, the term referred more commonly to the water lifting mechanism involving a chain of pots. See Irfan Habib, *Pursuing the History of Indian Technology: Pre-Modern Modes of Transmission of Power*, 20 *SOC. SCIENTIST* 1, 8 (1992) (describing water-mill technology transferred from the Mediterranean and Northern Africa to India).

96. See Karl W. Butzer et al., *Irrigation in Eastern Spain: Roman or Islamic Origins?*, in 75 *ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS* 479, 482–85 (1985) (describing the historical diffusion of Roman and Islamic water law into Spain).

97. *Id.*

98. THOMAS F. GLICK, *THE OLD WORLD BACKGROUND OF THE IRRIGATION SYSTEM OF SAN ANTONIO, TEXAS* 5–26 (1972).

99. *Id.*

100. ARTHUR MAASS & RAYMOND L. ANDERSON, . . . AND THE DESERT SHALL REJOICE: *CONFLICT, GROWTH AND JUSTICE IN ARID ENVIRONMENTS* 1 (1978).

Mexican law changed from legal precedents to historical antecedents over time.¹⁰¹

D. British Colonial Law

A fourth path that transplanted public water and related land use laws to the United States involved colonial laws, and more specifically British irrigation laws and policies.¹⁰² When the British searched for irrigation methods in the mid-nineteenth century, they found Spanish and Italian models and their Roman antecedents useful for their expanding empire.¹⁰³ Later, when California engineers and lawyers searched internationally for models of large-scale irrigation development and administration for the Central Valley in the late-nineteenth century, the Punjab region of British India proved influential in their decisions.¹⁰⁴ State ownership and control over water resources were fundamental in British India, and likewise differentiated state and federal reclamation programs in California from the smaller-scale reclamation projects in other states of the western U.S.¹⁰⁵ The path of British colonial irrigation transplants in the late-nineteenth century involved interactions among projects in Egypt, South Africa, Australia, and India, and engaged leading scholars and scientists in those regions.¹⁰⁶

E. Summary

Each of these four paths transmitted ideas and analogues—if not formal precedents—derived from Roman antecedents. They evolved in different regions of the world and affected different regions of the United States, directly in some cases and indirectly in others. As recorded in citations and previous scholarship on the public trust doctrine case in Illinois,¹⁰⁷ English

101. Baade, *supra* note 45.

102. See, e.g., James L. Wescoat Jr., *Water Rights in South Asia and the United States: Comparative Perspectives, 1873–2000*, in LAND, PROPERTY AND THE ENVIRONMENT 298, 308–15 (John F. Richards ed., 2002) (describing the influence of British colonial law in India on the development of water law in California).

103. *Id.* at 308.

104. *Id.* at 309–11.

105. Wescoat, *Wittfogel East and West*, in CULTURAL ENCOUNTERS WITH THE ENVIRONMENT, *supra* note 23, at 118–20.

106. *Id.* at 117–18.

107. William D. Araiza, *Democracy, Distrust and the Public Trust: Process-Based Constitutional Theory, the Public Trust Doctrine, and the Search for a Substantive Environmental Value*, ISSUES IN LEGAL SCHOLARSHIP 8 (2003), <http://www.bepress.com/ils/iss4/art1>; Michael Blumm, *Public Property and the Democratization of Western Water Law: A Modern View of the Public Trust Doctrine*, ISSUES IN LEGAL SCHOLARSHIP 7 (2003), <http://www.bepress.com/ils/iss4/art2>; see also Richard Delgado, *Trust Theory of Environmental Protection, and Some Dark Thoughts on the Possibility of Law Reform*, ISSUES IN LEGAL SCHOLARSHIP (2003), <http://www.bepress.com/ils/iss4/art4> (discussing the public trust theory and the role impact it has had on environmental reform).

common law antecedents had the greatest direct influence, followed by less direct French and colonial traditions. The Spanish connection is included here more for the exemplary scholarship on its diffusion and varied influence. These international transplants collectively shaped the wider context of the local controversy that erupted in the *Illinois Central* case in Chicago.

V. CHICAGO LAKEFRONT STRUGGLES

The seeds of the *Illinois Central* controversy were sown in the initial platting of the city in 1830, which was undertaken in part to help finance a canal between the Great Lakes and Mississippi River that Louis Jolliet had earlier envisioned. The plat of what is now the “Loop” in downtown Chicago included a lakefront parcel that was demarcated to “remain public ground forever open, clear and free of any buildings, or other obstruction whatever.”¹⁰⁸ Some copies of the map label this parcel in what was then called Lake Park, and now Grant Park, as public ground, “forever to remain vacant of buildings.”¹⁰⁹ That legal language would have enormous significance in Chicago’s lakefront lawsuits and landscape design.

Initially chartered in 1851, the railroad’s southern entry route into the City of Chicago proved controversial.¹¹⁰ Two alternatives were envisioned: one along the South Branch of the Chicago River and the other along the lakefront. The lakefront route became the preferred route, as different parties jockeyed for land and transportation connections to the mouth of the Chicago River on Lake Michigan. Construction of a jetty north of the Chicago River mouth had blocked sediment transport upstream of the harbor and accelerated lakefront erosion downstream—erosion of prime downtown lakefront property.¹¹¹

Synopses of the *Illinois Central* case portray it as a coastal land-grab give-away by the Illinois legislature in 1869 that was soon revoked by a reform legislature in 1873, triggering the lawsuit filed by the railroad.¹¹² Recent legal histories have deepened our understanding of the context and content of the case.¹¹³ Kearney and Merrill present a monographic account

108. LOIS WILLE, *FOREVER OPEN, CLEAR AND FREE: THE STRUGGLE FOR CHICAGO’S LAKEFRONT* 23 (2d ed. 1991) (1972) (detailing the creation in 1836 of a lakefront plan in what is now Chicago’s “Loop”).

109. *See id.* at 73–74 (describing the ideals driving the establishment of public parks in Chicago); *see also* Figure 4 (showing the downtown plat).

110. *See* Howard G. Brownson, *The History of the Illinois Central Railroad to 1870*, 4 *UNIV. OF. ILL. STUDIES IN THE SOC. SCIENCES* 285, 333–38 (1915).

111. WILLE, *supra* note 108, at 25.

112. *Id.* at 36–37.

113. *See generally* Kearney & Merrill, *supra* note 5 (giving a historical perspective on *Illinois Central*).

of the complex land and real estate politics in Chicago and Illinois, in which the railroad was one of many actors.¹¹⁴

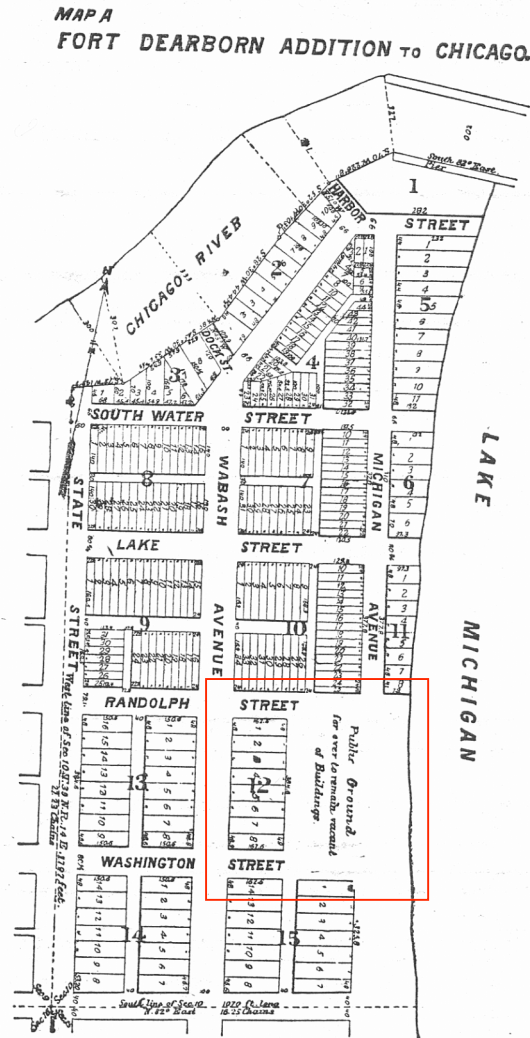


Figure 4: Plat of Fort Dearborn Addition to Chicago.¹¹⁵

114. See *id.* at 817–23 (discussing the historical circumstances surrounding *Illinois Central*).

115. Fort Dearborn Addition to Chicago, 1839, Encyclopedia of Chicago, <http://encyclopedia.chicagohistory.org/pages/10710.html> (last visited Apr. 27 2009); 2 REPORT OF THE SUBMERGED AND SHORE LANDS INVESTIGATIVE COMM. TO THE GOVERNOR OF ILLINOIS AND FORTY-SEVENTH GENERAL ASSEMBLY OF ILLINOIS 146 (Ill. State J. Co. 1911).

There was also a connection between the railroad legislation and public parks. In 1869, the same year that the Illinois legislature awarded a long stretch of submerged lands along the Chicago lakefront to the railroad, the legislature also created Chicago's three large park commissions: the South Park Commission centered in the suburb of Hyde Park, which would host the 1893 World's Columbian Exposition; the West Park Commission that extended to the suburb of Oak Park; and the Lincoln Park Commission north of the city center.¹¹⁶

What is less widely recognized is that the 1869 railroad legislation granted the submerged lands to the City of Chicago (City) to be deeded over to the railroad, thus entangling the City in the deal.¹¹⁷ Beyond that, the legislation required that the railroad pay \$800,000 into a "Park Fund" held by the City to be divided proportionately among the three new park commissions.¹¹⁸ This arrangement was controversial, and the City chose to escrow rather than accept the park funds.¹¹⁹ As noted above, the legislature repealed its grant to the railroad in 1873.¹²⁰ The railroad had initiated construction but did not file suit against the State until nine years later in 1883.¹²¹ The case was decided by the U.S. Supreme Court another nine years later in 1892.¹²² A monographic law review article by Grant delves into peculiar legal aspects of the case, including: the U.S. Supreme Court's jurisdiction over a state matter; Justice Stephen Field's arguments and rationale in the majority opinion (a 4-3 decision with two justices recused);¹²³ and the distribution of outcomes that affirmed state authority over its submerged lands held in trust for the public subject to the federal navigation servitude.¹²⁴ The railroad obtained a right-of-way for its tracks that fulfilled its commercial aims and charter, and the City gained riparian rights to the valuable new public lakefront created by landfill dumped by the railroad, and by the City itself, after the great fire of 1871.¹²⁵

116. Act of Feb. 24, 1869, 1869 Ill. Laws 358, *amended by* Act of Apr. 16, 1869, 1869 Ill. Laws 366 (creating a park commissions for the Chicago area).

117. *Id.*

118. WILLE, *supra* note 108, at 36.

119. *See generally* People *ex rel.* Wilson v. Salomon, 51 Ill. 37, 39 (1869) (requesting writ of mandamus forcing clerk to collect assessments for the park).

120. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387, 449 (1892).

121. *Id.* at 433.

122. *Id.* at 387.

123. *See* PAUL KENS, JUSTICE STEPHEN FIELD: SHAPING LIBERTY FROM THE GOLD RUSH TO THE GILDED AGE 249 (1997) (discussing the inconsistencies in Justice Field's *Illinois Central* opinion).

124. *See* Douglas L. Grant, *Underpinnings of the Public Trust Doctrine: Lessons from Illinois Central Railroad*, 33 ARIZ. ST. L.J. 849, 863-64 (2001) (describing the line of cases affirming state authority over submerged lands subject to the federal navigation servitude).

125. *See* Kearney & Merrill, *supra* note 5, at 801 (discussing the Illinois Supreme Court's holding in *Illinois Central* as an exercise in "dispute resolution").

According to Grant, the decision was not so much a contract dispute as an affirmation of state reserved powers.¹²⁶ Underlying these legal principles was the geographic scale of the dispute, in which the entire harbor area of a rapidly growing metropolis had been seemingly ceded away, in what Justice Field regarded as a grossly unbalanced consideration of public and private interests.¹²⁷

If geographic scale was a factor in this case, we should be able to observe its significance in subsequent case law and lakefront design projects. *Illinois Central* set the stage for the Chicago Lakefront ordinance of 1919, which reinforced protection of the downtown Lake (Grant) Park and extended protection to other reaches of the lakeshore in Lincoln Park and the South Park system.¹²⁸ Daniel Burnham and Edward Bennett's *Plan of Chicago* in 1909 unveiled a vision for a continuous park along Chicago's entire lakefront.¹²⁹ Although still incomplete in several northern and southern reaches, the Chicago Park District, consolidated in 1933, established one of the premier urban waterfront park systems in the United States.¹³⁰

The legal character and significance of *Illinois Central* is more complex than brief accounts of the public trust doctrine suggest, and it is further complicated by the record of subsequent lawsuits and landscape projects. A small sample of these cases includes:

1893: The Art Institute of Chicago was the first, and last, major building constructed in Lake (Grant) Park.¹³¹

1897–1909: A series of cases brought by Montgomery Ward blocked construction in Lake (Grant) Park, including an armory and the Field Museum of Natural History.¹³²

1931: The expansion of the Art Institute of Chicago was subject to design restrictions to comply with the Lakefront ordinance.¹³³

126. Grant, *supra* note 124, at 851.

127. KENS, *supra* note 123, at 249.

128. See CHI., ILL., ZONING ORDINANCES ch. 16-4 (1973); see also WILLE, *supra* note 108, at 90 (discussing the circumstances which lead to the passage of the 1919 Ordinance).

129. BURNHAM & BENNETT, *supra* note 6, at 50.

130. 70 ILL. COMP. STAT. ANN. 1505/0.01 (West 1933).

131. DIANE DILLON, ENCYCLOPEDIA OF CHICAGO, ART INSTITUTE OF CHICAGO, <http://www.encyclopedia.chicagohistory.org/pages/79.html> (last visited Apr. 27, 2009).

132. Ward v. Field Museum of Natural History, 89 N.E. 731 (Ill. 1909); City of Chicago v. Ward, 48 N.E. 927 (Ill. 1897).

133. Stevens Hotel Co. v. Art Inst. of Chicago, 260 Ill. App. 555, 576 (1931).

1933: The three park commissions were consolidated into one Chicago Park District.¹³⁴

1950s–1970s: Lakefront construction was permitted for quasi-public organizations such as the McCormick Place Convention Center, and private developers such as the Lake Front Towers residence downtown and the U.S. Steel plant in south Chicago.¹³⁵

1990: *Lake Michigan Federation v. U.S. Army Corp of Engineers et al.*, blocked Loyola University's proposed lakefront expansion.¹³⁶

1998: Chicago Museum of Science and Industry was allowed to expand on the south lakefront with landscape design enhancements.¹³⁷

2003: *Friends of the Parks v. Chicago Parks District* allowed for Soldier Field expansion for the Chicago Bears, along with lakefront landscape improvements.¹³⁸

2004: Millennium Park opened, and included the dramatic Pritzker Bandshell and sculptures that meet the requirements of the lakefront protection ordinance, and present a new model of urban landscape park design.¹³⁹

2006–present: The former USX (U.S. Steel South Works) site is reclaimed for multi-use development and public access with sediment dredged from the Illinois River near Peoria.¹⁴⁰

134. 70 ILL. COMP. STAT. ANN. 1505/1 (West 1933).

135. See *Droste v. Kerner*, 217 N.E.2d 73, 75 (Ill. 1966) (discussing the Illinois legislature's sale of 194.6 acres of submerged lands to U.S. Steel for \$19,460), *overruled by* *Paepcke v. Public Bldg. Comm'n*, 263 N.E.2d 11, 18 (Ill. 1970); *Bowes v. City of Chicago*, 120 N.E.2d 15, 32 (Ill. 1954) (upholding construction of a water filtration plant for the city of Chicago in Chicago Harbor); JOSEPH P. SCHWIETERMAN & DANA M. CASPAL, *THE POLITICS OF PLACE: A HISTORY OF ZONING IN CHICAGO* 98 (Jane Heron ed., 2006) (discussing public outrage over lakefront impacts of the McCormick Place Convention Center).

136. *Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs*, 742 F. Supp. 441, 447 (N.D. Ill. 1990).

137. *Petersen v. Chicago Plan Comm'n*, 707 N.E.2d 150, 159 (Ill. App. Ct. 1998).

138. *Friends of the Parks v. Chicago Park Dist.*, 786 N.E.2d 161, 163–64 (Ill. 2003).

139. GILFOYLE, *supra* note 8.

140. See Ill. Sustainable Tech. Ct., Univ. of Ill., U.S. Steel Chicago–Mud to Parks Photos, http://www.istc.illinois.edu/special_projects/il_river/us_steel.cfm (last visited Apr. 27, 2009) (“This innovative project provided topsoil to a new Chicago lake front park at the old US Steel South Works mill. The soil is dried mud from the bottom of Lake Peoria 168 miles downstream. The project is simultaneously helping restore depth to the lake while covering a slag field with topsoil.”).

This small sample of cases indicates how the public trust and associated lakefront protection policies have developed over time. In some cases, they have been strictly upheld,¹⁴¹ but in other cases they were waived to allow grants of submerged lands to companies like U.S. Steel on smaller parcels of land in industrial areas far from downtown.¹⁴² Many projects included significant design improvements or strategic locations and scales to enhance public benefits and mitigate impacts.¹⁴³ These examples support the hypothesis that spatial scale and environmental design have made an important difference in the development of submerged lands and parks along the Chicago lakefront. As parties in Chicago struggled with these issues, *Illinois Central* travelled in interesting ways to other states and environmental contexts across the United States.¹⁴⁴

VI. EXTENSIONS ACROSS THE UNITED STATES

Numerous works trace the evolution of the public trust doctrine from *Illinois Central* to the present.¹⁴⁵ They highlight the *Mono Lake* case that affirmed that the state of California has a public trust responsibility for the submerged lands and associated ecological habitat of Mono Lake, which constrains Los Angeles's rights to divert water from freshwater tributaries that feed the lake.¹⁴⁶ A handful of other U.S. Supreme Court cases that cite *Illinois Central* also figure prominently in these reviews.¹⁴⁷

141. See *Lake Mich. Fed'n*, 742 F. Supp. at 447 ("The lakebed of Lake Michigan is held in trust for and belongs to the citizenry of the state. The conveyance of lakebed property to a private party—no matter how reputable and highly motivated that private party may be—violates this public trust doctrine.").

142. *People ex rel. Scott v. Chicago Park Dist.*, 360 N.E.2d 773, 773–74 (Ill. 1976).

143. See generally SALLY A. KITT CHAPPELL, *CHICAGO'S URBAN NATURE: A GUIDE TO THE CITY'S ARCHITECTURE + LANDSCAPE* (2007) (exploring the architecture and landscape of Chicago's parks and open spaces); GILFOYLE, *supra* note 8 (detailing the history and design of Millennium Park in Chicago); BLAIR KAMIN, *WHY ARCHITECTURE MATTERS: LESSONS FROM CHICAGO* (2001) (discussing the different aspects of the importance of maintaining pervasive quality architecture in the context of the historical development of Chicago); and *CHICAGO ARCHITECTURE: HISTORIES, REVISIONS, ALTERNATIVES* (Charles Waldheim & Katerina Ruedi eds., 2005) (detailing a historical analysis of the architecture and urbanism of Chicago).

144. Grant, *supra* note 124, 852–54 (discussing how the Commerce Clause and Contract Clause have encouraged growth of the public trust doctrine).

145. JOHN HART, *STORM OVER MONO: THE MONO LAKE BATTLE AND THE CALIFORNIA WATER FUTURE* 180 (1996).

146. *Id.*; *Nat'l Audubon Soc'y v. Super. Ct. of Alpine County*, 658 P.2d 709, 711–12, 722, 728 (Cal. 1983).

147. See, e.g., *Shively v. Bowlby*, 152 U.S. 1, 46 (1894) (citing *Illinois Central* in a land grant case in Oregon); *Appleby v. City of New York*, 271 U.S. 364, 393–95 (1926) (citing *Illinois Central* and its expression of the limitations on the public trust doctrine); *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469, 488 (1988) (citing *Illinois Central* when recognizing that "the public trust doctrine 'is founded upon the necessity of preserving to the public the use of navigable waters from private interruption and encroachment.'").

Critics and supporters agree that Professor Joseph Sax's account of the public trust doctrine¹⁴⁸ precipitated an enormous body of legal inquiry into the nature, extensions, and limits of the public trust in land, water, and environment.¹⁴⁹ A LexisNexis search identified more than 250 law review articles with the phrase "public trust" in their titles.¹⁵⁰ This underestimates the number because this online database does not include early journal volumes, including those that published the two key articles by Deveney and MacGrady cited extensively by Huffman.¹⁵¹

While it is an exaggeration to say that law review articles on the public trust doctrine are almost as numerous as the number of decisions that cite *Illinois Central*, the number of public trust cases has not been as large as hoped or feared by various commentators. A Shepard's citation of *Illinois Central* on December 1, 2007 yielded: thirty-one U.S. Supreme Court cases, the most recent of which is *Idaho v. Coeur d'Alene Tribe*, 521 U.S. 261 (1997);¹⁵² sixty-nine U.S. District and Appeals Court cases;¹⁵³ and 438 state court cases.¹⁵⁴ Some public trust cases¹⁵⁵ do not cite *Illinois Central*,

148. Joseph Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 471–566 (1970).

149. See William D. Araiza, *Democracy, Distrust and the Public Trust: Process-Based Constitutional Theory, the Public Trust Doctrine, and the Search for a Substantive Environmental Value*, ISSUES IN LEGAL SCHOLARSHIP (2003), <http://www.bepress.com/ils/iss4/art1> ("The rebirth of the public trust doctrine is directly attributable to the publication of Joseph Sax's seminal 1970 article"); Jack H. Archer & Terrance W. Stone, *The Interaction of the Public Trust and the "Takings" Doctrines: Protecting Wetlands and Critical Coastal Areas*, 20 VT. L. REV. 81, 94 (1995) (discussion on how the public trust doctrine can be applied to protect coastal ecosystems by incorporating it into "existing coastal environmental and resource management programs"); Craig A. Arnold & Leigh Jewel, *Litigation's Bounded Effectiveness and the Real Public Trust Doctrine: The Aftermath of the Mono Lake Case*, 8 HASTINGS W. NW. J. ENVTL. L. & POL'Y 1, 3 n.11 (2001) ("Joseph Sax wrote the seminal work on the application of the public trust doctrine to natural resources law."); Harrison C. Dunning, *The Public Trust: A Fundamental Doctrine of American Property Law*, 19 ENVTL. L. 515, 524–25 (1989) (arguing that the public trust doctrine deserves more recognition from property law scholars); Huffman, *supra* note 5, at 3 (noting that Joseph Sax's article increased both academic commentary and judicial intervention.); Carol M. Rose, *Takings, Public Trust, Unhappy Truths, and Helpless Giants: A Review of Professor Joseph Sax's Defense of the Environment Through Academic Scholarship: Joseph Sax and the Idea of the Public Trust*, 25 ECOLOGY L.Q. 351, 351 (1998) (analyzing the impact of Joseph Sax's article); Charles Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine*, 19 ENVTL. L. 425, 426 n.3 (1989) (noting the influence of Joseph Sax's article).

150. LexisNexis.com, LexisNexis search of Law Reviews, CLE, Legal Journals & Periodicals, Combined (search for term "public trust" then under Advanced Search enter FOCUS Terms as "public trust," and Restrict Document Segment to "Title") (last conducted Mar. 20 2009).

151. See Huffman, *supra* note 5 (relying on Patrick Deveney, *Title, Jus Publicum, and the Public Trust: An Historical Analysis*, 1 SEA GRANT L.J. 13 (1976) and Glenn J. MacGrady, *The Navigability Concept in the Civil and Common Law: Historical Development, Current Importance, and Some Doctrines That Don't Hold Water*, 3 FLA. ST. U. L. REV. 511 (1975)).

152. LexisNexis.com, LexisNexis Shepard search of *Illinois Central R.R. Co. v. Illinois*, 146 U.S. 387 (1892) (under FOCUS link limiting by jurisdiction to Supreme Court cases).

153. Limiting the search under FOCUS to U.S. District and Appeals Court cases. *Id.*

154. Limiting the search under FOCUS to state court cases. LexisNexis, *supra* note 152.

so the citation analysis is more of a conservative indicator than comprehensive assessment of the historical geography of the public trust doctrine.

What previous law reviews do not examine is the geography of these citations. Geographically, the thirty-one U.S. Supreme Court cases are not numerous enough to note strong patterns. They include cases in Illinois¹⁵⁶ and other states in the Midwest¹⁵⁷ precipitated by *Illinois Central*. Later in the twentieth century, after a gap of almost a half-century, a new wave of cases occurred in the western U.S.¹⁵⁸ and to a lesser extent the Gulf Coast.¹⁵⁹ The sixty-nine U.S. Court of Appeals and District Court cases are also concentrated primarily in the West and secondarily in the midwestern regions (see Figure 5).¹⁶⁰

As expected, given state sovereignty over submerged land and related resources, a far larger number of cases have been decided in higher state courts (n=438).¹⁶¹ Figure 6 offers a geographic perspective on public trust doctrine cases in state courts. Again, the Pacific coast states led by California have cited *Illinois Central* most frequently, followed by Illinois and other Great Lakes states. While the public trust doctrine took shape in coastal environments, and the majority of citations are in coastal states, interior states have also cited *Illinois Central* in their relatively small numbers of public trust cases,¹⁶² which raises interesting questions about the historical extensions of public trust law. Conversely, some coastal states such as Alabama, Georgia, and New Hampshire do not have any record of citing *Illinois Central*.¹⁶³

155. See, e.g., *Golden Feather Cmty. Ass'n v. Thermalito Irrigation Dist.*, 257 Cal. Rep. 836 (Cal. Ct. App. 1989) (holding that the public trust doctrine did not apply; and not citing *Illinois Central*).

156. E.g., *West Chicago R.R. Co. v. Illinois*, 201 U.S. 506, 524 (1906) (citing *Illinois Central* when declaring that “the rights of the company, as the owner of the fee of land on either side of the river or in its bed, were subject to the paramount right of navigation over the waters of the river.”).

157. E.g., *United States v. River Rouge Improvement Co.*, 269 U.S. 411 (1926).

158. E.g., *Summa Corp. v. California ex rel.*, 466 U.S. 198, 206–07 (1984) (relying on the Court’s holding in *Illinois Central*, California argued that “its public trust servitude is a sovereign right, the interest did not have to be reserved expressly on the federal patent to survive the confirmation proceedings.”).

159. See, e.g., *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469, 484–85 (1988) (“the States, upon entering the Union, were given ownership over all lands beneath waters subject to the tide’s influence . . . [and that the] lands at issue here became property of the State upon its admission to the Union in 1817. Furthermore . . . subsequent developments did not divest the State of its ownership of these public trust lands . . .”).

160. See *supra* note 153.

161. See *supra* note 154.

162. E.g., *Idaho v. Coeur d’Alene Tribe*, 521 U.S. 261, 285 (1997) (“*Illinois Central* was ‘necessarily a statement of Illinois law’ . . . it invoked the principle in American law recognizing the weighty public interests in submerged lands.”).

163. See Figure 6.

While each of these cases has a history as complex as *Illinois Central*,¹⁶⁴ the main principle derived from them by public trust commentators is that states have an inherent responsibility for protecting public interests in their submerged lands and related environmental resources adjoining navigable water bodies. Those interests include access to and use of banks, shores, surfaces, and in some cases the submerged lands themselves. The public trust doctrine does not *grant* public rights to these submerged lands and waters as much as recognize those rights.¹⁶⁵ Although state responsibility to protect public rights, interests, and resources is inalienable,¹⁶⁶ states can grant lands to a private party as long as they fulfill their trust responsibility.¹⁶⁷ The case study of Chicago indicated that the geographic scale of public and private uses is a significant variable, as is the perceived significance of the landscape in question and the beneficial role of environmental design in preserving or enhancing its public values.¹⁶⁸

These case law reviews and citation results support the overall expectation that *Illinois Central* and the public trust doctrine have had the greatest significance in coastal environments associated with precedents in New Jersey and New York, regional diffusion across the Great Lakes states, and a later body of cases in the western United States, and to a lesser extent the Gulf Coast states. These results also support the observations of many law reviews that, for better or worse, the public trust doctrine has not expanded dramatically in addressing public land, water, and associated environmental concerns in the U. S. What is more surprising and challenging for U.S. environmental law, however, is the growing international extensions of *Illinois Central* and the public trust doctrine.

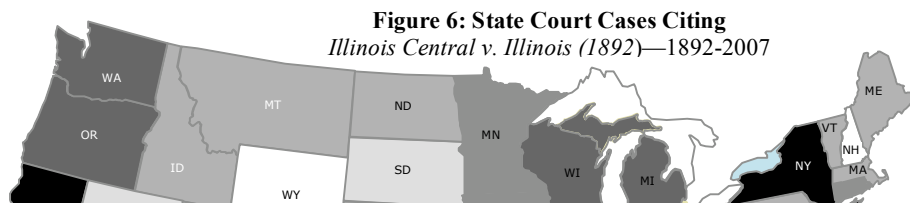
164. See Kearney & Merrill, *supra* note 5 (discussing the historical circumstances surrounding *Illinois Central*).

165. See generally Eric Surett, Laura Dietz, & Sonja Larsen, *Water Rights, Interests, and Uses*, 78 AM. JUR. 2d Waters § 4, available at 2008 WL AMJUR WATERS § 4 (“The public trust doctrine operates as a rule of construction creating a presumption that the general assembly does not intend to convey lands in a manner that would impair public trust rights, although this presumption is overcome by a special grant from the general assembly expressly conveying lands underlying navigable waters in fee simple and without reservation of any public trust rights.”).

166. See *id.* (“The state does not relinquish its right of ownership and claim to the waters of natural streams, although it has granted to its citizens, on prescribed conditions, the right to the use of such waters for beneficial purposes within its own boundaries.”).

167. See Mary Ann King, *Getting Our Feet Wet: An Introduction to Water Trusts*, 28 HARV. ENVT. L. REV. 495, 505 (2004) (“State legislatures have granted varying amounts of authority to state agencies and private organizations to appropriate or otherwise acquire (through purchase, lease, or donation) instream water rights.”).

168. See *supra* notes 131–40.



VII. INTERNATIONAL TRANSPLANTS

The post-1970 history of the public trust doctrine, *per se*, has an interesting international as well as domestic trajectory. Foreign case law is more difficult to search online, and must be searched with a variety of sources including full-text searches of law review articles, internet search engines, and snowball searches of citations. An initial use of these methods identified a handful of cases on most continents including South Asia (see Figure 7).¹⁶⁹ Adding the country names of Bangladesh, India, Nepal, Pakistan, and Sri Lanka to the search terms identified five major cases that are discussed briefly below (see Figure 8).¹⁷⁰

In India and Pakistan, as in the United States, the states of India and the provinces of Pakistan have primary responsibility for regulating and administering water and related land resources within their borders.¹⁷¹ The federal governments have jurisdiction over inter-state waters, navigation, and national water planning and development.¹⁷²

169. See, e.g., Berry Fong Chung Hsu, *Constitutional Protection of a Sustainable Environment in the Hong Kong Special Administrative Region*, 16 J. ENVTL. L. 193, 203–10 (2004) (describing the origins and development of the public trust doctrine in the Hong Kong Special Administrative Region).

170. See generally Jona Razzaque, *Application of Public Trust Doctrine in Indian Environmental Cases*, 13 J. ENVTL. L. 221, 227 (2001) (discussing case law applying the public trust doctrine in India).

171. See generally Philippe Cullet, *Water Law in India: Overview of Existing Framework and Proposed Reforms* 4 (Int'l Env'tl. Law Research Center, Working Paper No. 2007-01), available at <http://www.ielrc.org/content/w0701.pdf> (discussing India's ability to regulate water resources due to its constitutional scheme, which allows the Union to legislate particular issues such as "shipping and navigation on national waterways as well as powers to regulate the use of tidal and territorial waters"); James L. Wescoat Jr., Sarah Halvorson, & Daanish Mustafa, *Water Management In the Indus Basin of Pakistan: A Half-Century Perspective*, 16 INT'L J. WATER RESOURCES 391, 394–403 (2001) (discussing Pakistan's numerous activities in the Indus River Basin Development Program).

172. See Philippe Cullet, *supra* note 171, at 1 ("In India, water law is made of different components. It includes international treaties, federal and state acts. It also includes a number of less formal arrangements, including water and water-related policies as well as customary rules and regulations."); see James L. Wescoat Jr. et al., *supra* note 171, at 394–95 (discussing how economic development programs and the Indus River Treaty have lead to the Indus River basin in Pakistan becoming one of the world's "largest contiguous irrigation and hydropower systems").

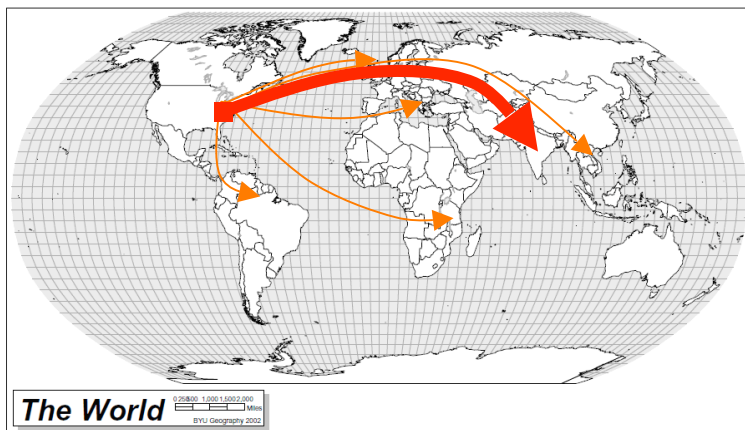


Figure 7: International transplants of *Illinois Central* globally.¹⁷³

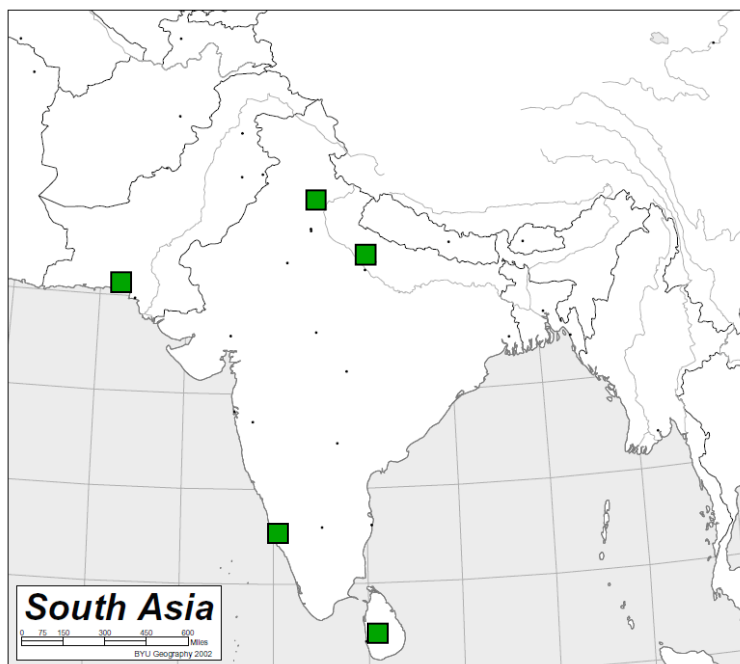


Figure 8: International transplants of *Illinois Central* in South Asia.¹⁷⁴

173. Map by author on BYU Geography Department base map.

174. Using a LexisNexis and Google Scholar search for the terms “public trust doctrine” OR “Illinois Central” AND selected country names; map by author on BYU Geography Department base map.

What distinguishes India's courts from those in other countries, however, is the mechanism of Public Interest Litigation (PIL) that allows for a direct petition to the Supreme Court of cases having pressing national significance not adequately addressed by the state.¹⁷⁵ Early PIL cases brought by environmental lawyer M.C. Mehta focused on air pollution impacts on the Taj Mahal, river pollution, and mining in the Delhi region which led to industrial regulation, plant closures, and environmental monitoring.¹⁷⁶ In later years, the Supreme Court of India established a "Green Bench" to hear environmental cases.¹⁷⁷

The first case to cite the public trust doctrine, Professor Sax's writings, and/or *Illinois Central* was *M.C. Mehta v. Kamal Nath*,¹⁷⁸ also known as the Span Manali or Beas River case. The suit was brought by Mr. Mehta against Environment Minister Kamal Nath, who had an interest in a resort development that physically relocated a flood-prone reach of the Beas River.¹⁷⁹ The Supreme Court of India accepted the argument that the public trust doctrine applied in India, citing Roman, English, and U.S. common law sources.¹⁸⁰ It further decided that the Span Resorts project violated the public trust doctrine, and that its impacts would have to be remedied and a fine paid.¹⁸¹

A second case, *M.I. Builders Pvt Ltd v Radhey Shyam Sahu*¹⁸² applied the public trust doctrine to the historic Jhandewala Park in the city of Lucknow, which had been partially destroyed to create a new market and underground parking lot. Again, the court concluded that the state had failed in its duty to protect the public trust, citing public trust doctrine

175. See Dr. Parvez Hassan and Azim Azfar, *Securing Environmental Rights Through Public Interest Litigation in South Asia*, 22 VA. ENVTL. L.J. 215, 226–31 (2004) (discussing "the scale and sophistication of Indian environmental case law arising through public interest litigation").

176. M. C. Mehta v. Union of India and Others, No. 13381 of 1984 at 35–38 (India Dec. 30, 1996), available at <http://www.elaw.org/node/2718>; see also M.C. Mehta v. Union of India, A.I.R. 2004 S.C. 4016 (India), available at www.ielrc.org/content/e0409.pdf.

177. Raghay Sharma, Note, *Green Courts in India: Strengthening Environmental Governance?*, 4 ENV'T & DEV. J. 50, 55 (2008), available at <http://www.lead-journal.org/content/08050.pdf> (discussing how the three judge panel, known as the "Green Bench" issued a "'continuing mandamus', operative for past twelve years and has been using it, inter alia, to deal with prominent issues including conversion of forest land for non-forest purposes, illegal felling, potentially threatening mining operations, afforestation and compensation by private user agencies for using forest land").

178. M.C. Mehta v. Kamal Nath and Others, (1997) 1 S.C.C. 388; M.C. Mehta v. Union of India and Others (1988) 2 S.C.R. 530, available at <http://www.elaw.org/node/1348>; and M.C. Mehta v. Kamal Nath and Others, No. 182 of 1996, (India Dec. 13, 1996), available at <http://www.elaw.org/node/2785>.

179. M.C. Mehta v. Kamal Nath and Others, No. 182 of 1996, at 1 (India Dec. 13, 1996), available at <http://www.elaw.org/node/2785>.

180. M.C. Mehta v. Kamal Nath and Others, (1997) 1 S.C.C. 388 at 39.1.

181. *Id.* at 39.3.

182. M.I. Builders Pvt. Ltd. v. Radhey Shyam Sahu, A.I.R. 1999 S.C. 2468 (India), available at <http://judis.nic.in/supremecourt/imgs.aspx>.

sources from the U.S. and elsewhere.¹⁸³ The interventions were to be demolished, the park restored to its original condition, and a fine paid.¹⁸⁴

A third major case involves a Coca Cola bottling plant's groundwater withdrawals and wastewater discharge, which damaged local village water supplies in the southern state of Kerala.¹⁸⁵ In addition to mobilizing an international protest, the local *panchayat* government brought suit against Coca Cola and the state, citing among other grievances a violation of public trust responsibilities for groundwater.¹⁸⁶ In *Perumatty Grama Panchayat v. State of Kerala*,¹⁸⁷ also known as the *Plachimada* case after the nearby village, the Kerala High Court affirmed the company's right to reasonable groundwater use. However, Coca Cola closed the plant in 2004.¹⁸⁸ Activists are seeking compensation for damages to local villagers while the case is appealed to the Supreme Court.¹⁸⁹

The Sri Lanka case of *Bulankulama v. Ministry of Industrial Development* involved a dispute over the impacts of phosphate mining.¹⁹⁰ While both sides cited *Illinois Central* and the public trust doctrine, and the court discussed the doctrine in its opinion,¹⁹¹ it rejected its relevance and employed other principles and precedents to decide the case.¹⁹²

Most recently, Sahil Bachao, an environmental organization in Karachi, Pakistan, filed a petition against the Defense Housing Authority's proposed residential development along a prime stretch of public beach.¹⁹³ Plaintiffs argued that the proposed high-end housing complex would restrict public

183. *Id.*

184. *Id.*

185. *Perumatty Grama Panchayat v. State of Kerala*, 2004 (1) KLT 731 (Pak.), available at www.ielrc.org/content/e0415.pdf.

186. *Id.*

187. *Id.*

188. Margaret Burnett & Richard Welford, *Case Study: Coca-Cola and water in India: episode 2*, 15 CORP. SOC. RESP. & ENVTL. MGMT. 298, 298–304 (2007); Sujith Koonan, *Legal Implications of Plachimada: A Case Study*, 12 (Int'l Envtl Law Research Ctr., Working Paper No. 07-05, 207), available at <http://www.ielrc.org/content/w0705.pdf>.

189. Koonan, *supra* note 188, at 13–14, 16.

190. Supreme Court of Sri Lanka [SC] [Supreme Court] Jun. 2, 2000, *Bulankulama v. Min. of Indus. Dev.*, S.C. Application No. 884/99 (F/R), available at <http://www.elaw.org/node/1295> (last visited Apr. 27, 2009) [hereinafter *Bulankulama*] (noting that Sri Lankan law does not need to draw upon foreign public doctrine to address natural resources issues).

191. *Id.*

192. *Id.*

193. Arif Belgaumi, *Saving Karachi's Beaches*, THE NEWS, Apr. 24, 2007, at 1, <http://www.urckarachi.org/CLIFTON%20BEACH.HTM#Saving%20Karachis%20beaches> (last visited Apr. 27, 2009) [hereinafter *Belgaumi*]; Beach Front Protection Citizens Group—Karachi, *Sahil Bachao . . . SAVE Karachi's Beaches*, <http://www.petitiononline.com/KHIBEACH/petition.html> (last visited Apr. 27, 2009) [hereinafter *Sahil Bachao*]; see also Ari [sic] Hasan, *DHA's Waterfront Development Project: Privatisation of Clifton Beach in Karachi*, <http://base.d-ph.info/en/fiches/dph/fiche-dph-6934.html#Haut> (last visited Apr. 27, 2009) (discussing the Defense Housing Authority's waterfront development project).

access and use, violating the public trust in coastal waters.¹⁹⁴ While rejecting a stay order request, the Sindh High Court acknowledged the applicability of the public trust doctrine to the project and the expectation that it could be fulfilled.¹⁹⁵

It is not yet clear whether or how these cases will diffuse through South Asian courts and landscapes, but several initial points can be made. First, the Indian and Pakistani cases demonstrate an openness to legal transplants of the public trust doctrine as a vehicle of environmental protection for a wide array of environmental issues including urban open space—analogs envisioned but not realized in the U.S.¹⁹⁶ By comparison, the Sri Lankan court took a critical view, noting but rejecting public trust doctrine arguments.¹⁹⁷ The most recent case in Karachi deals with the classic public trust doctrine issue of public access to a coastal landscape subject to large-scale private development.¹⁹⁸ It involves precedents based on formal analogy.¹⁹⁹

Second, in comparison with U.S. case law, these South Asian applications involved small-scale but dramatic environmental impacts.²⁰⁰ In the Span, Lucknow, and Karachi cases, environmental design was a key variable—by generating negative impacts.²⁰¹ The Sindh High Court

194. Sahil Bachao, *supra* note 193.

195. Belgaumi, *supra* note 193.

196. See Justice K.G. Balakrishnan, Chief Justice of India, Supreme Court, Lecture at Northwestern University, Illinois: The Role of Foreign Precedent in a Country's Legal System (Oct. 28, 2008), http://www.supremecourtindia.nic.in/new_links/28%5B1%5D.10.08_Northwestern_University_lecture.pdf (noting that reliance on foreign precedents has become commonplace in public law litigation but should not be relied on when it clearly runs contrary to existing domestic law); Rajeev Dhavan, *Borrowed Ideas: On the Impact of American Scholarship on Indian Law*, 33 AM. J. COMP. LAW 505, 513–16 (1985) (discussing the traffic of precedential case law from American courts to India); see also Adam M. Smith, *Making Itself at Home: Understanding Foreign Law in Domestic Jurisprudence: The Indian Case*, 24 BERKELEY J. INT'L L. 218 (2006) (exploring the historical reliance of Indian courts on foreign legal doctrine).

197. See Bulankulama, *supra* note 190 (stating that the public trust doctrine is restrictive in scope).

198. Belgaumi, *supra* note 193.

199. See generally AHMED HASAN, ANALOGICAL REASONING IN ISLAMIC JURISPRUDENCE: A STUDY OF THE PRINCIPLE OF QIYAS (Islamic Research Inst. 1992) (discussing the formal logic of analogy in Islamic legal reasoning); HESSE, *supra* note 45, at 57–61 (describing material analogies and the validity of arguments from analogies).

200. For a large-scale issues see Neal A. Kemkar, *Environmental Peacemaking: Ending Conflict Between India and Pakistan on the Siachen Glacier Through the Creation of a Transboundary Peace Park*, 25 STAN. ENVTL. L.J. 67, 71 (2006) (“the protection of the Siachen ecosystem through the creation of a transboundary peace park between India and Pakistan has sound legal, political, and environmental justifications.”).

201. M.I. Builders Pvt. Ltd. v. Radhey Shyam Sahu, A.I.R. 1999 S.C. 2468 (India), available at <http://judis.nic.in/supremecourt/imgs.aspx>.

asserted the potentially positive role of design in Karachi for avoiding, minimizing, mitigating, and expanding public benefits.²⁰²

VIII. INTERNATIONAL “RETURN FLOWS”?

Public trust law in India exemplifies Watson’s model of legal transplants. In contrast with the late-nineteenth century when U.S. water engineers, lawyers, and planners searched internationally for models to address the problems they faced, the late-twentieth century paradigm in the U.S. was to export rather than import legal and technical expertise.²⁰³ The U.S. has gone through at least a half-century of parochial withdrawal from its turn-of-the-nineteenth century international study of foreign water laws and policies.²⁰⁴ There are exceptions: *United States v. California*,²⁰⁵ cites a case in India on state and federal jurisdiction over offshore islands.²⁰⁶

But many American jurists debate the soundness of citing foreign precedents, not to mention transplanting them to the U.S.²⁰⁷ Many of the underlying concerns are well-founded, such as the extraordinary challenges of understanding the legal and social context of the foreign case, and accumulating bodies of state law that no longer depend upon federal and foreign precedents.²⁰⁸ As results in this paper reveal, state public trust law has developed in the U.S. substantially since *Illinois Central*.²⁰⁹

At the same time, public trust cases in India are breaking new ground in applications and reasoning that have potential relevance for environmental law in the U.S. If terms like “precedents” and “transplants” raise concerns, we might instead consider the water resources metaphor of “return flows.”²¹⁰ To what extent do South Asian cases offer potential lessons for the U.S.?

202. Sahil Bachao, *supra* note 193 (noting that the Sindh High Court stated that “the doctrine of public trust has long been recognized all over the world, which enjoins the State to preserve and protect the public interest in beaches, lakeshores etc.”).

203. See, e.g., Dhavan, *supra* note 196, at 513–18 (describing the importation of American precedent and legal development to India).

204. See John C. Peck & Burke W. Griggs, *Groundwater Law and Management: The Asia (IWMI)-Kansas Program*, 41 CREIGHTON L. REV. 315, 317 (2008) (demonstrating a recent experiment in applying knowledge gained in the U.S. to foreign countries).

205. *United States v. California*, 332 U.S. 19, 40 n.22 (1947).

206. *Sec’y of State for India v. Chelikani Rama Rao*, (1916) 43 Ind. App. 192, 204.

207. See Ruth Bader Ginsburg, *A Decent Respect to the Opinions of [Human]kind: The Value of a Comparative Perspective in Constitutional Adjudication*, 64 CAMBRIDGE L.J. 575, 580 (2005) (arguing that foreign opinions, while not authoritative, can add to the store of knowledge relevant to the solution of trying questions).

208. *Id.*

209. See generally *supra* notes 153–63 (discussing the number of U.S. Supreme Court cases, U.S. district court cases, and appeals court cases, as well as state court cases that cite *Illinois Central*).

210. See Robert W. Hill & Ivan A. Walter, *Irrigation Impact on River Flows*, in *ENCYCLOPEDIA OF WATER SCIENCE* 473–74 (B.A. Stewart & Terry A. Howell eds., 2003) (basing the “return flows”

Cities like Chicago face many legal and landscape challenges, and might find distant international cases metaphorically inspiring or analogically useful, even if they do not rise to the level of formal precedents. Several Chicago and Great Lakes examples help support this point (see Figure 9).²¹¹

Glass v. Goeckel
Michigan Ct. App.,
May 2004 – Public
access betw. OHWM
and water's edge. In
Mich. Sup. Ct., 2005.

Q: Relevance for lake
level fluctuations,
climate variability,
withdrawals, and
lakefront development?

Cf. Karachi waterfront
development case



Figure 9: Possible “return flows” from South Asia to the Midwest²¹²

Some South Asian transplants in other fields have taken root in Chicago and reshaped its landscape.²¹³ The Grameen Bank of Bangladesh provided a partial model for the banking methods of the South Shore Bank of Chicago’s neighborhood lending.²¹⁴

More speculatively, we may consider two recent public trust cases in Michigan. In *Michigan Citizens for Water Conservation v. Nestle*

metaphor on the term in western water law for irrigation waters that return to a water body and are available for subsequent appropriation).

211. *Glass v. Goeckel*, 683 N.W.2d 719 (Mich. Ct. App. 2004), *rev’d* 703 N.W.2d 58 (Mich. 2005).

212. Map notes by author on Michigan’s Department of Environmental Quality base map, available at http://www.michigan.gov/deq/0,1607,7-135-3313_3677-15926--,00.html.

213. Wescoat, *Water Rights in South Asia and the United States: Comparative Perspectives, 1873–2000*, in *LAND, PROPERTY AND THE ENVIRONMENT*, *supra* note 102.

214. RICHARD P. TAUB, *COMMUNITY CAPITALISM: THE SOUTH SHORE BANK’S STRATEGY FOR NEIGHBORHOOD REVITALIZATION* (1994).

Waters,²¹⁵ a local organization argued that corporate groundwater pumping for bottled water production violated the state's public trust responsibilities for groundwater protection.²¹⁶ The Michigan case bears comparison with the *Plachimada* case decided in India which extended the public trust doctrine to groundwater depleted and polluted by a multinational bottling company.²¹⁷ These cases share enough similarities with other areas near large commercial water users to warrant international and domestic comparisons. Unsustainable groundwater pumping in communities just outside the Great Lakes basin, including Chicago and Milwaukee suburbs, also bears comparison with regional groundwater governance issues and experiments in South Asia, where there is a large and growing body of scientific and policy literature.²¹⁸

Another public trust case in Michigan, *Glass v. Goeckel*, involved the right of public access to the lakefront vis-à-vis the boundaries of private ownership.²¹⁹ The district court ruled on behalf of public access,²²⁰ the appeals court overturned that ruling citing Michigan precedents for the "water's edge", while the Michigan Supreme Court affirmed the ordinary high water mark as the boundary of private ownership.²²¹ This case was followed by bills in Ohio²²² as well as Michigan²²³ to extend private boundaries and beach maintenance rights to the water's edge. These cases bear comparison not only with earlier riparian rights cases in state law, but also with public trust arguments and applications in other waterfront development contexts in South Asia and elsewhere. It is difficult to recall today that the creation of Chicago's lakefront involved wholesale transformation of hundreds of private riparian landholdings for a

215. See Mich. Citizens for Water Conservation v. Nestlé Waters North America Inc., 737 N.W.2d 447, 447 (Mich. 2007) (denying standing for part of the plaintiff's suit against pumping groundwater).

216. Kenton M. Bednarz, *Should the Public Trust Doctrine Interplay with the Bottling of Michigan Groundwater? Now is the Appropriate Time for the Michigan Supreme Court to Decide*, 53 WAYNE L. REV. 733, 735 (2007).

217. See generally Koonan, *supra* note 188 (discussing the legal implications of *Plachimada*).

218. Tushar Shah, *India's Master Plan for groundwater recharge: An assessment and some suggestions for revision*, 43 ECON. & POL. WKLY. 41, 41-49 (Dec. 20, 2008).

219. *Glass v. Goeckel*, 683 N.W.2d 719 (Mich. Ct. App. 2004), *rev'd* 703 N.W.2d 58 (Mich. 2005).

220. *Id.*

221. See Robert Haskell Abrams, *Walking the Beach to the Core of Sovereignty: The Historic Basis for the Public Trust Doctrine Applied in Glass v. Goeckel*, 40 U. MICH. J.L. REFORM 861 (2007) (discussing the Michigan Supreme Court's discussion of the public trust doctrine in *Glass v. Goeckel*).

222. H.B. 218, 125th Gen. Assem., Reg. Sess. (Ohio 2003-04), available at http://www.legislature.state.oh.us/bills.cfm?ID=125_HB_218 (last visited Apr. 27, 2009).

223. See, e.g., Save Our Shoreline. <http://www.saveourshoreline.org/LegalMatters/Legislation/2003-PA-0014.pdf> (last visited Mar. 24, 2009) (focusing on preserving ownership to the waters edge).

continuous publicly accessible lakefront park.²²⁴ It may require dramatic international waterfront design precedents, along with legal precedents, to envision and achieve such possibilities in the future.²²⁵

Gaps remain in the Chicago lakefront park, and comparable challenges lie on the horizon across the U.S. Each lakefront gap has generated environmental and policy design proposals, some promising, some involving international competitions.²²⁶ New challenges identified in the public trust doctrine literature range from ecological protection to sea level rise,²²⁷ coastal stewardship,²²⁸ energy production,²²⁹ and urban parks.²³⁰ These parks studies invite comparison with the *M.I. Builders* case in Lucknow, India, where the Court ordered the architectural interventions to be removed.²³¹

CONCLUSION

This story of public water and public trust, has travelled across centuries and continents. It has included many fascinating chapters for scholars and students. But its practical conclusions boil down to three key points that have not, to my knowledge, been underscored in previous reviews of the public trust doctrine.

First, *Illinois Central* and other cases in Chicago and elsewhere affirm that geographic scale and location matter, along with historical context and precedents. The history of cases like *Illinois Central* has received increasingly rigorous and critical study.²³² Comparable inquiry should

224. *Revell v. People*, 52 N.E. 1052, 1060 (Ill. 1898); *Miller v. Comm'rs of Lincoln Park*, 116 N.E. 178, 179, 181 (Ill. 1917); *Lehmann v. Revell*, 188 N.E. 531, 532–35 (Ill. 1933).

225. GRAHAM FOUNDATION FOR ADVANCED STUDIES IN THE FINE ARTS, COMPETITION 2 (2003), available at <http://grahamfoundation.org/competition/images/competition2003.pdf>.

226. *Id.* at 1.

227. Meg Caldwell & Craig Holt Segall, *No Day at the Beach: Sea Level Rise, Ecosystem Loss, and Public Access Along the California Coast*, 34 *ECOLOGY L.Q.* 533, 534 (2007).

228. Judith E. Moore, *The Public Trust Doctrine and Environmental Stewardship in Coastal New Hampshire* (Feb. 2000) (unpublished Ph.D thesis, Massachusetts Institute of Technology), available at <http://dspace.mit.edu/handle/1721.1/9271>.

229. Robert W. Eberhardt, Note, *Federalism and the Siting of Offshore Wind Energy Facilities*, 14 *N.Y.U. ENVTL. L.J.* 374, 383–86 (2006).

230. Karl P. Baker & Dwight H. Merriam, *Indelible Public Interests in Property: The Public Trust and the Public Forum*, 32 *B.C. ENVTL. AFF. L. REV.* 275, 285 (2005); Cyane Gresham, Note, *Improving Public Trust Protections of Municipal Parkland in New York*, 13 *FORDHAM ENVTL. L.J.* 259 (2002) (discussing the use of the public trust doctrine for New York's municipal parks); Zachary C. Kleinsasser, Note, *The Law and Planning of Public Open Spaces: Boston's Big Dig and Beyond: Public and Private Property Rights Regulatory and Physical Takings and the Public Trust Doctrine*, 32 *B.C. ENVTL. AFF. L. REV.* 421 (2005); Serena M. Williams, *Sustaining Urban Green Spaces: Can Public Parks be Protected under the Public Trust Doctrine?*, 10 *S.C. ENVTL. L.J.* 23, 48 (2002).

231. *M.I. Builders Pvt. Ltd. v. Radhey Shyam Sahu*, A.I.R. 1999 S.C. 2468 (India), at 52, available at <http://judis.nic.in/supremecourt/imgs.aspx>.

232. Grant, *supra* note 124; Kearney & Merrill, *supra* note 5.

focus on their geographic scale, location, and context. In addition to helping explain why the Illinois Central Railroad grant was revoked while a later U.S. Steel lakefront grant was upheld, geographic analysis could help explain why some legal transplants travel from one jurisdiction and domain of law to another while other transplants are rejected or cited only in passing.

Second, environmental design has shaped the public law cases discussed here in varying ways and degrees. It is not just the geographic scale of a project that has triggered, or helped avoid, a lawsuit. Domestic and international cases from Roman times to the present are ultimately site-specific and shaped by the design decisions on those sites. Roman law provided for certain types of private construction adjoining public waters, but prohibited others.²³³ Even philanthropist Marshall Field could not locate his neo-classical museum building in Grant Park, Chicago.²³⁴ However, contemporary architects from Frank Gehry to Renzo Piano have successfully navigated restrictions on “building” to create new designs in and adjoining Millennium Park.²³⁵ Innovative landscape architectural design at the Park, and at the contested Soldier Field stadium, has helped accommodate expanding public interests in these spaces. New ecological lakefront island parks are under construction in the Morgan Shoals area of south Chicago,²³⁶ without legal challenge. Another ecological lakefront park is proposed for Northerly Island²³⁷ in downtown Chicago where the only challenge came from the Meigs Field Airport, which Mayor Daley demolished, and for which the City of Chicago was charged a fine.

In each of the South Asian cases, by comparison, flawed design contributed to landmark legal cases. The problematic designs included major channel disturbance on the Beas River,²³⁸ damaged a historic park in Lucknow,²³⁹ and high-rise private beachfront housing in Karachi.²⁴⁰ While U.S. courts find it difficult to consider these foreign precedents, designers in a globalizing world must embrace foreign, as well as local precedents.²⁴¹

233. See Figure 2.

234. See *Ward v. Field Museum of Natural History*, 89 N.E.2d 731, 737 (1909) (dismissing the case and finding for the defendant).

235. GILFOYLE, *supra* note 8, at 229–30.

236. Rob Rejman, Director, Capital Constr. for the Chicago Park Dist., Great Lakes Urban Symposium, *Morgan Shoal: Planning for a Sustainable Ecosystem & Shoreline Protection for Lake Michigan* (Jan. 22, 2009).

237. Alliance for the Great Lakes, Urban Habitat: Northerly Island, <http://www.greatlakes.org/Page.aspx?pid=593> (last visited Apr. 27, 2009).

238. *M.C. Mehta v. Kamal Nath and Others*, (1997) 1 S.C.C. 388 (India).

239. *M.I. Builders Pvt. Ltd. v. Radhey Shyam Sahu*, A.I.R. 1999 S.C. 2468 (India), available at <http://judis.nic.in/supremecourt/imgs.aspx>.

240. Sahil Bachao, *supra* note 193.

241. See, e.g., Watson, *Aspects of Reception of Law*, *supra* note 24, at 346–50 (discussing the borrowing of Roman law by other countries).

They must know how to analyze, interpret, use, and transcend precedents, and they can learn much, again by analogy, from legal scholarship.

The third and final conclusion concerns the role of precedent in law and design. The conceptual framework presented in this paper laid out a gradient of approaches from the super-precedents of law to the metaphors of design.²⁴² Of course, designers regard some precedents as strictly binding while lawyers make super-abundant uses of metaphor. In between, many processes of transplants, formal analysis, and informal analogies operate in each profession in ways that yield new precedents. Thus, when one reads that, “a careful review of the history—the precedent—does not make the case for expanded application of the public trust doctrine,” one suspects it is not the last word.²⁴³ Precedents have complex geographical and design dimensions as well as histories. Some precedents travel long distances across space and time while others operate in highly circumscribed ways, and still others serve more as antecedents or analogies, more or less useful and salient, rather than foundational or true.²⁴⁴ Many public landscapes remain metaphorically as well as literally submerged. The landscapes that trigger extensions of the public trust often remain submerged until design inspires, or provokes, new law.

242. See Figure 1.

243. Huffman, *supra* note 5, at 103.

244. See, e.g., Hannah Jacobs Wiseman, *Notice and Expectation Under Bounded Uncertainty: Defining Evolving Property Rights Boundaries Through Public Trust and Takings*, 21 TUL. ENVTL. L.J. 233 (2008) (describing the evolution of property rights).